

*First Set*  
*of*  
*Supplementary Designs*

For Insertion In  
**TYPICAL DESIGNS of**  
**TIMBER STRUCTURES**

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*25 New Typical Designs* TO ADD TO YOUR LIBRARY  
OF TIMBER DESIGN INFORMATION DEVELOPED BY  
TECO ENGINEERS FOR YOUR READY REFERENCE

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Compliments of  
**TIMBER ENGINEERING COMPANY**

1319 Eighteenth Street, N. W.  
WASHINGTON, D. C.

MARCH, 1943

(For instructions on inserting supplementary designs see inside)



# Method of Insertion and Placement of Supplementary Designs

**W**HEN the reference "Typical Designs of Timber Structures" was originally published it was planned that additions in the form of supplementary designs would be furnished at a later date. The first group of books was therefore bound with the Wire-O-Type binding and when priorities stopped the use of this binding, the more recent copies were bound with plastic.

In the case of books numbered up to 25100 the Wire-O binding is used. In all the books bound in this manner, a cardboard comb will be found just inside the back cover. The sheets have been specially punched for insertion with this comb. Locate the design in its proper position according to the table below. Lay slotted edge of sheet to be inserted on top of wire rings. With teeth of comb placed over ears of slotted edge, press down until the sheet is secured by the rings. When finished with comb return it to its original position by hanging on the rings in back of the book.

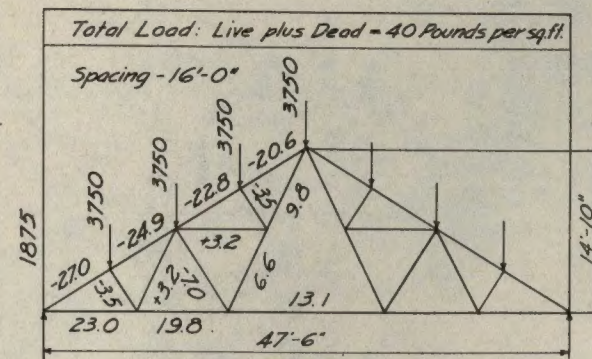
For books numbered above 25100, the plastic binding has been used and the method of insertion follows the same procedure.

The following is a list by design number (see lower right hand corner of design) of the supplementary designs contained in this folder. This listing shows the proper placement of these designs so that they may be easily located when needed. The present designs in the book have been arranged according to type of structure and size.

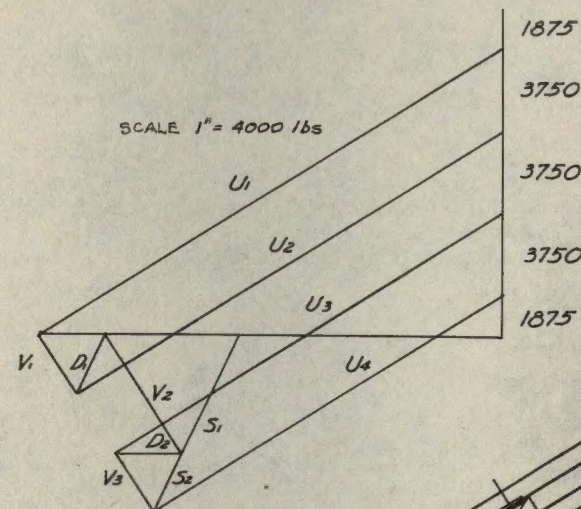
## Placement of Supplementary Designs

Design No.	Section of Book	Reference to Present Design Placement
356	Pitched Fink Trusses	Place between 224-235
298	" " "	" " 235-233
326	" " "	" " 233-210
295	Pitched Pratt and Belgian Trusses	Precedes 176
333	" " " " "	Follows 295
314	" " " " "	" 333
266	" " " " "	" 176
387	" " " " "	" 266
357	" " " " "	" 287
299	" " " " "	" 357
375	" " " " "	" 123
394	Flat Pratt Trusses	Precedes 31
374	" " "	Follows 31
300	" " "	" 374
376	" " "	" 221
384	" " "	" 77
254 A	Bowstring Trusses	" 8
304	Factory Trusses	" 171
246	Bridges and Trestles	" 325
B-2	" " "	" B-5
B-7	" " "	" B-2
B-9	" " "	" B-7
220	" " "	" B-9
460	Miscellaneous	End of book
Heavy Timber		" " "
Construction, Miscellaneous		





SCALE 1/8" = 1'



SCALE 1" = 4000 lbs

# NOTES:

## GENERAL

The top chord has been designed for combined stress. 2x10 rafters as shown are satisfactory.

## LUMBER

Lumber shall be of a structural grade with minimum allowable working stresses in pounds per sq. in. as follows:

1000# Compression parallel to grain.

1200# Extreme fiber in bending.

1,600,000# Modulus of elasticity.

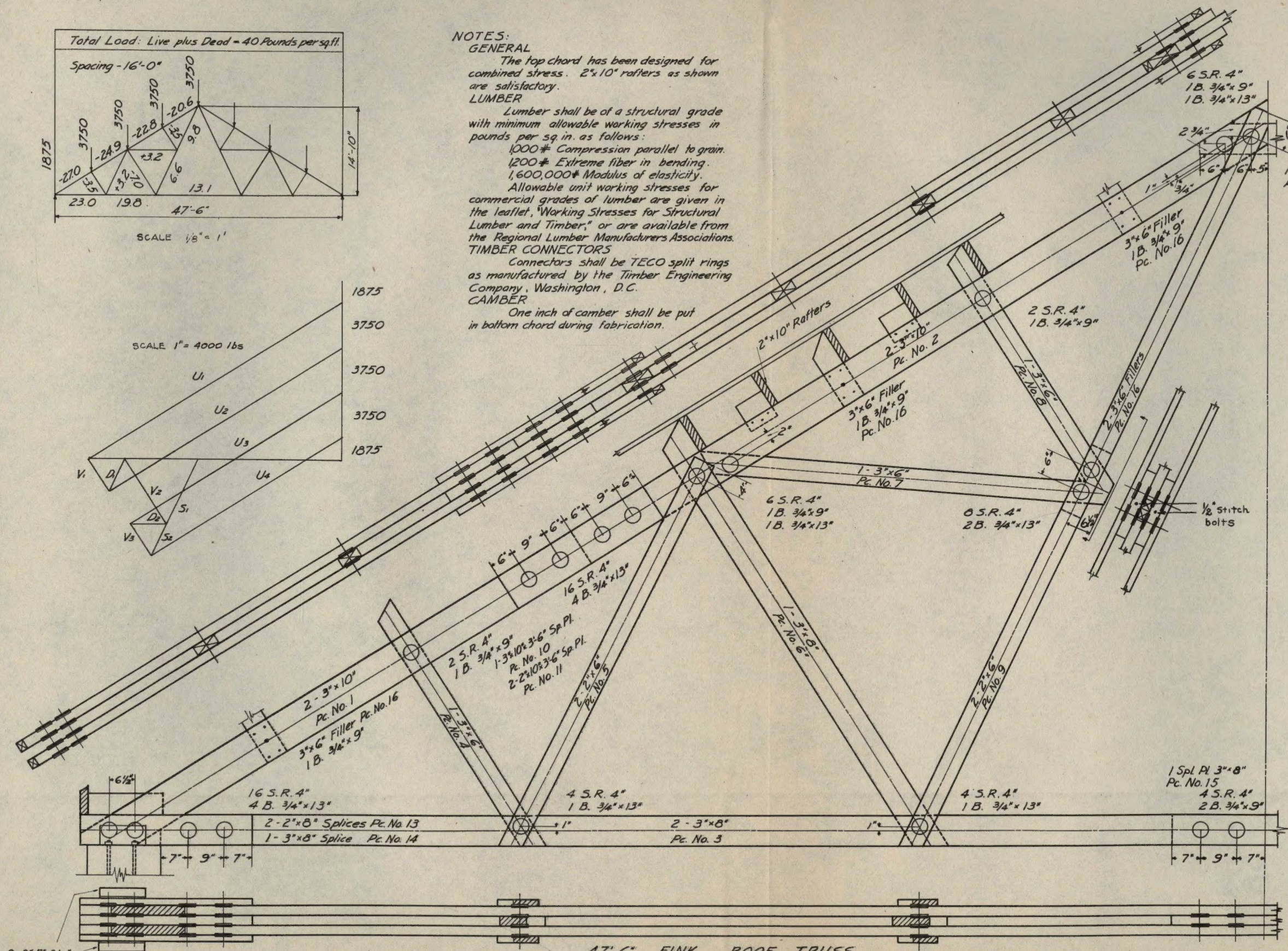
Allowable unit working stresses for commercial grades of lumber are given in the leaflet, "Working Stresses for Structural Lumber and Timber," or are available from the Regional Lumber Manufacturers Associations.

## TIMBER CONNECTORS

Connectors shall be TECO split rings as manufactured by the Timber Engineering Company, Washington, D.C.

## CAMBER

One inch of camber shall be put in bottom chord during fabrication.



## MATERIALS LIST PER TRUSS

### LUMBER CUTTING BILL (S45)

Mk.	Size	Length	Make	Cut	From	Order	F.B.M.
1	3x10	12'-0"	4	12'-0"	4	120	
2	3x10	16'-10"	4	18'-0"	4	180	
3	3x8	22'-8"	4	24'-0"	4	192	
4	3x6	6'-0"	2	12'-0"	1	18	
5	2x6	9'-0"	4	18'-0"	2	36	
6	3x8	10'-6"	2	12'-0"	1	24	
7	3x6	8'-5"	2	18'-0"	1	27	
8	3x6	6'-0"	2	12'-0"	1	18	
9	2x6	17'-0"	4	18'-0"	4	72	
10	3x10	3'-6"	2	8'-0"	1	20	
11	2x10	3'-6"	4	14'-0"	1	24	
12	3x8	2'-10"	1	12'-0"	1	12	
13	2x8	3'-6"	4	14'-0"	1	19	
14	3x8	3'-6"	2	12'-0"	1	24	
15	3x8	3'-10"	1	12'-0"	1	12	
16	3x6	1'-7"	10	16'-0"	1	24	
Total F.B.M.							826

## CONNECTORS

No.	Item	Size
136	Split Rings	4"

## HARDWARE

No.	Item	Size
18	Machine Bolts	3/4" x 9"
28	Machine Bolts	3/4" x 13"
84	Plate Washers	3/4" x 3/16"
4	Angles	3x5x3/16-12 1/2"
8	Anchor Bolts	3/4" x 7"
4	Stitch Bolts	1/2" x 7"

Typical design for use of Engineers and Architects.

TIMBER ENGINEERING COMPANY  
WASHINGTON, D. C.

FINK ROOF TRUSS

Span 47'-6" Rise 14'-10"

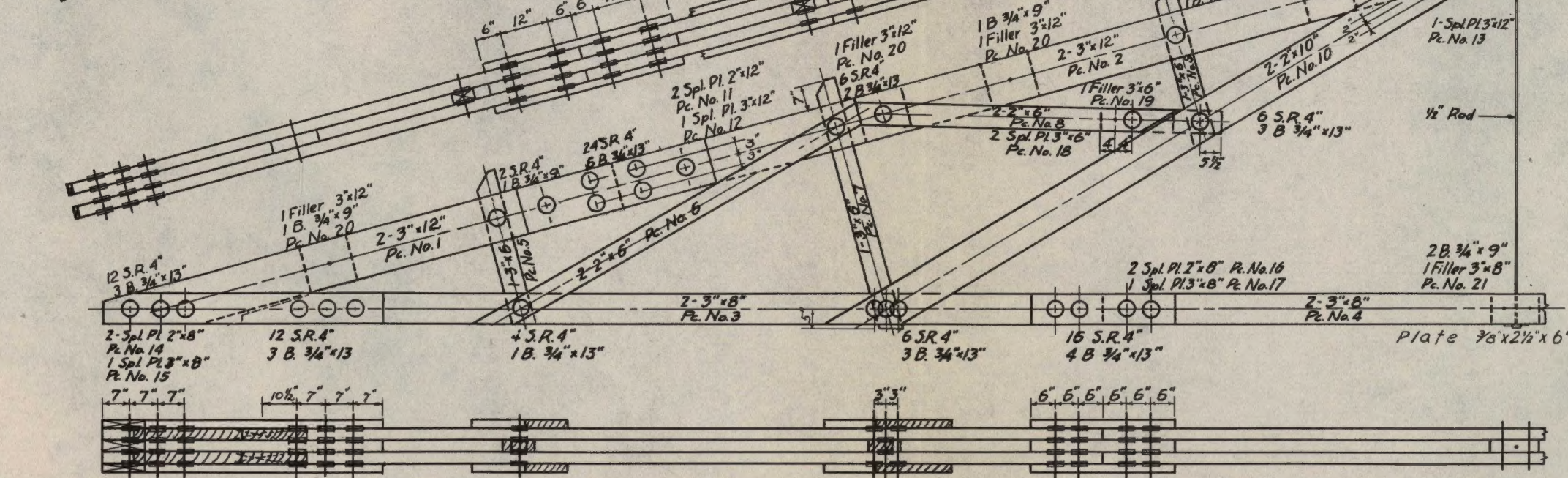
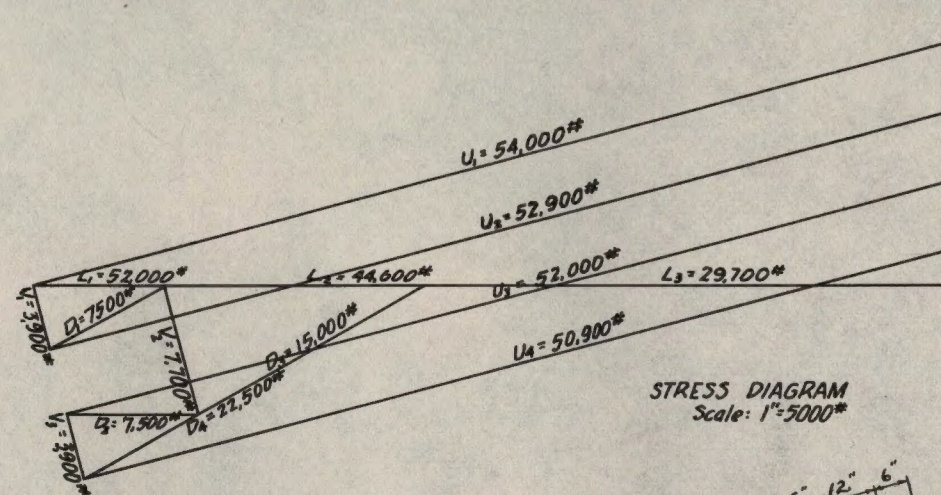
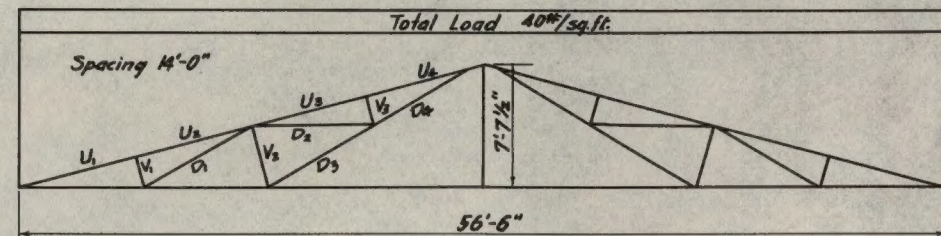
DESIGNED BY E.S.L.	DATE 6/12/41	DRAWING NO.
CHECKED BY D.T.R.	2/10/42	356
TRACED BY S.L.B.	3/7/42	

47'-6" FINK ROOF TRUSS

Scale: 1" = 1'-0"

Scale in Feet





56'-6" FINK ROOF TRUSS  
Scale: 3/4" = 1'-0"  
Scale in Feet

MATERIALS LIST PER TRUSS											
LUMBER CUTTING BILL											
Mk	Size	Length	Mk	Size	Length	Mk	Size	Length	Mk	Size	Length
1	3"x12"	11'-2"	4	16'-0"	4	192	12	3"x12"	4'-0"	2	Pc. No. 1
2	3"x12"	19'-5"	4	20'-0"	4	240	13	3"x12"	3'-6"	1	12
3	3"x8"	18'-0"	4	18'-0"	4	144	14	2"x8"	6'-0"	4	12'-0"
4	3"x8"	17'-3"	2	18'-0"	2	72	15	3"x8"	6'-0"	2	20'-0"
5	3"x6"	3'-3"	2	16'-0"	1	24	16	2"x8"	3'-0"	4	12'-0"
6	2"x6"	9'-2"	4	18'-0"	4	72	17	3"x8"	3'-0"	2	Pc. No. 15
7	3"x6"	5'-5"	2	12'-0"	1	18	18	3"x6"	2'-6"	4	10'-0"
8	2"x6"	6'-8"	4	14'-0"	2	28	19	3"x6"	1'-6"	2	Pc. No. 5
9	3"x6"	3'-3"	2	Pc. No. 5			20	3"x12"	1'-0"	8	Pc. No. 1
10	2"x10"	16'-7"	4	18'-0"	4	120	21	3"x8"	1'-0"	1	Pc. No. 15
11	2"x12"	4'-0"	4	16'-0"	1	32					
											Total F.B. M. 1057
CONNECTORS											
No	Item	Size	No	Item	Size	No	Item	Size	No	Item	Size
204	Split Rings	4"									
HARDWARE											
No	Item	Size	No	Item	Size	No	Item	Size	No	Item	Size
12	Machine Bolts	3/4" x 9"	2	Plates	3/8" x 2 1/2" x 6"						
56	Machine Bolts	3/4" x 13"	1	Threaded Rod	1/2" x 8'-6"						
136	Plate Washers	3"x3"x 3/16"									

## NOTES

### GENERAL

This truss has been designed for loads at top chord panel points only. Purlins 4"x12" are satisfactory.

### CAMBER

The proper camber may be introduced into this truss by raising the lower chord 1 1/2" at the center during fabrication.

### LUMBER

Lumber shall be of a structural grade with minimum allowable working stresses in pounds per sq. in. as follows.

880\* Compression parallel to grain.

1200\* Extreme fiber in bending.

1,600,000 Modulus of elasticity.

Allowable working stresses for commercial grades are given in the leaflet "Working Stresses for Structural Lumber and Timber" or are available from the Regional Lumber Manufacturers Associations.

### CONNECTORS

Connectors shall be TECO split rings as manufactured by the Timber Engineering Company of Washington, D.C.

Typical design for use of  
Architects and Engineers.

TIMBER ENGINEERING COMPANY

WASHINGTON, D. C.

FINK ROOF TRUSS

SPAN 56'-6" RISE 7'-7 1/2"

SCALE 3/4" = 1'-0" SHEET 1 OF 1

DATE

DESIGNED BY J.M.C. 1/9/40

CHECKED BY W.B.M. 12/16/41

TRACED BY G.M.K. 12/20/41

D.R. N.M. J.M.C.

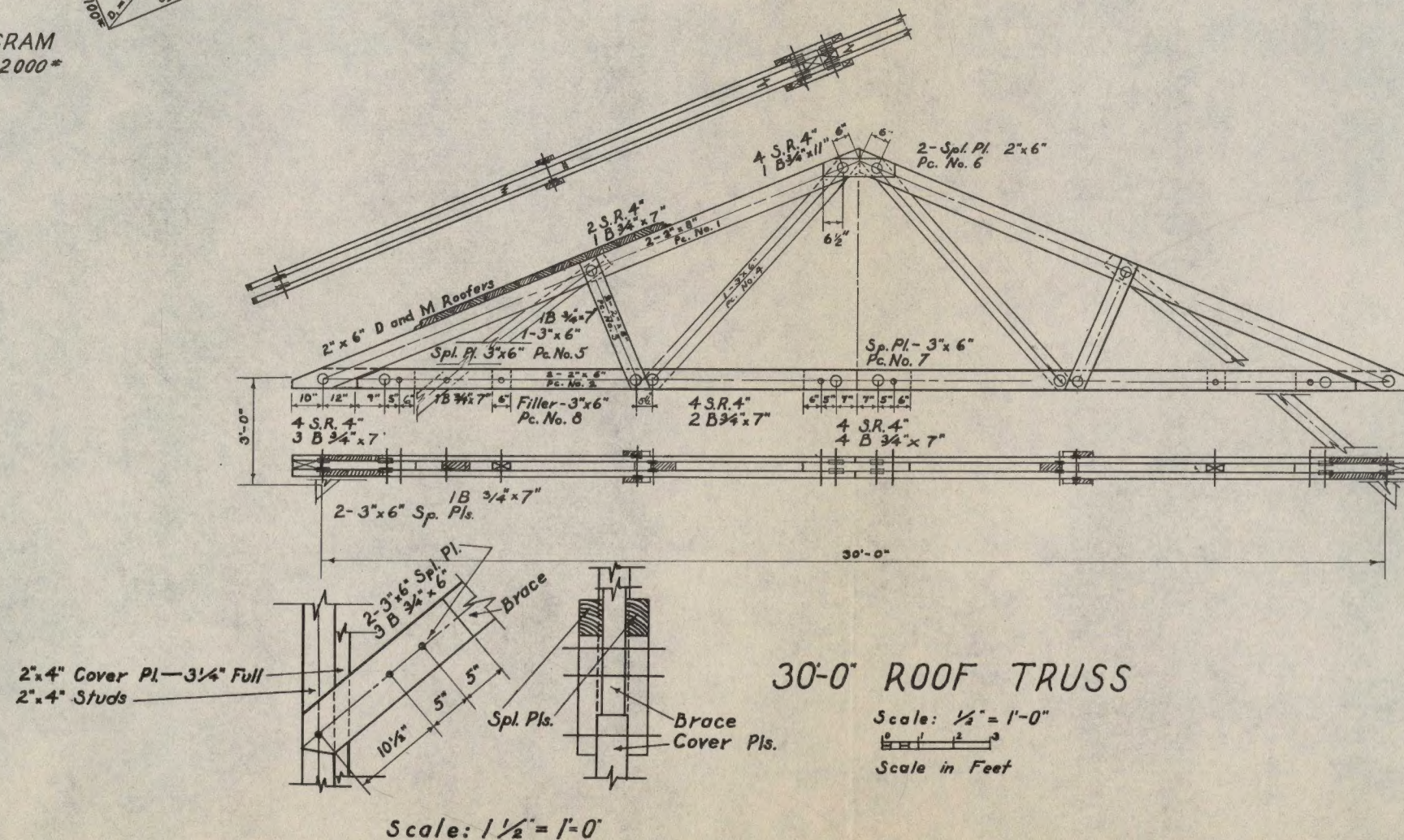
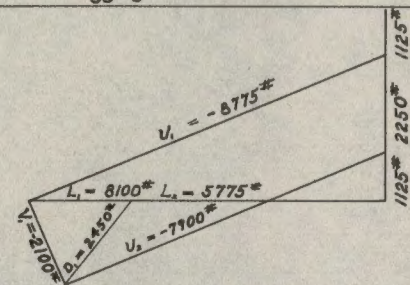
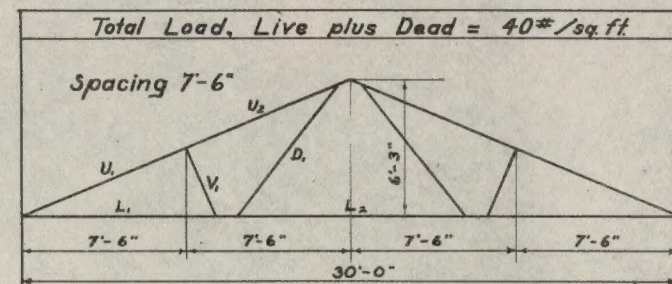
REVISED 11-9-42 D.W.

298









**NOTES:**

*This truss has been designed to carry roof planking applied directly to top chords.*

LUMBER-

Lumber shall be of a structural grade with minimum allowable working stresses in pounds per sq. in. as follows:

880\* Compression parallel to grain.

1,200\* Extreme fiber in bending.

1,600,000\* Modulus of elasticity

Allowable unit working stresses for commercial grades of lumber are given in the leaflet, "Working Stresses for Structural Lumber and Timber" or are available from the Regional Lumber Manufacturers Associations.

## TIMBER CONNECTORS-

Connectors shall be TECO splitrings as manufactured by the Timber Engineering Company, Washington, D.C.

MATERIALS PER TRUSS						
Lumber Cutting Bill						
MK.	Size	Length	Made	Cut From	Order	F.B.M.
1	2"x8"	17'-3/4"	4	18'-0"	4	96
2	2"x8"	14'-0"	4	14'-0"	4	56
3	2"x6"	4'-0"	4	18'-0"	1	16
4	3"x6"	8'-11/2"	2	18'-0"	1	27
5	3"x6"	3'-6"	2	12'-0"	1	18
6	2"x6"	2'-0"	2	4'-0"	1	4
7	3"x6"	3'-0"	1	Pe. No. 5		
8	3"x6"	0'-6"	2	Pe. No. 5		
Total F.B.M.						217
Hardware						
No.	Item	Size				
18	Machine Bolts	3/4"x 7"				
2	Machine Bolts	3/4"x 11"				
40	Plate Washers	3"x 3"x 3/16"				
Connectors						
No.	Item	Size				
32	Split Rings	4"				

*Typical Design for use of Engineers  
and Architects.*

**TIMBER ENGINEERING COMPANY**  
WASHINGTON, D. C.

**PITCHED ROOF TRUSS**

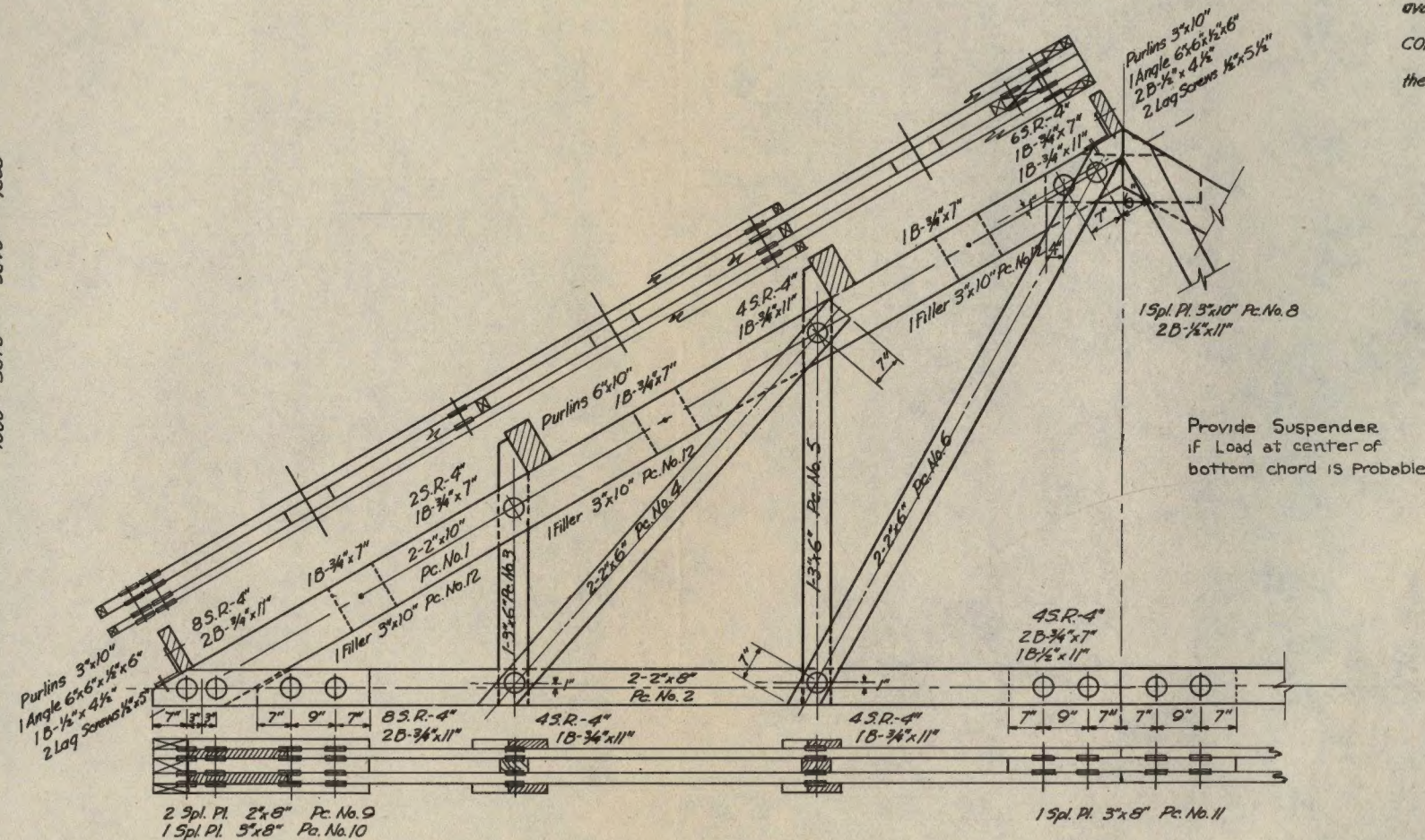
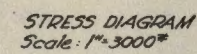
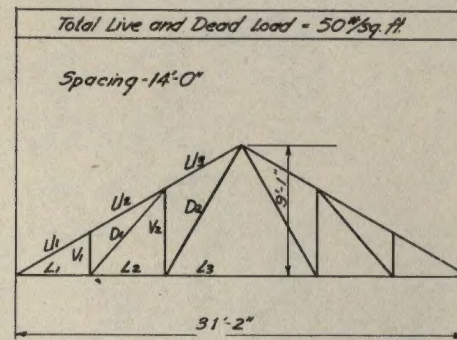
**SPAN 30'-0" RISE 6'-3"**

SCALE  $\frac{1}{2}" = 1'-0"$  SHEET / OF /

DATE	DRAWING NO.
DESIGNED BY W.A.A. 10/27/39 CHECKED BY W.B.M. 12/12/41 TRACED BY R.W.B. 12/20/41	295

O.K., N.M. J.H.C. 10/27/39  
Ravage dw. 11/17/42





NOTES:

GENERAL-

This truss has been designed for loads at top chord panel points only.

LUMBER-

Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. in. as follows:

880\* Compression parallel to grain

1200\* Extreme fiber in bending.

1,600,000\* Modulus of Elasticity

Allowable unit working stresses are given in the leaflet "Working Stresses for Structural Lumber and Timber" or are available from the Regional Lumber Manufacturers Associations.

### CONNECTORS-

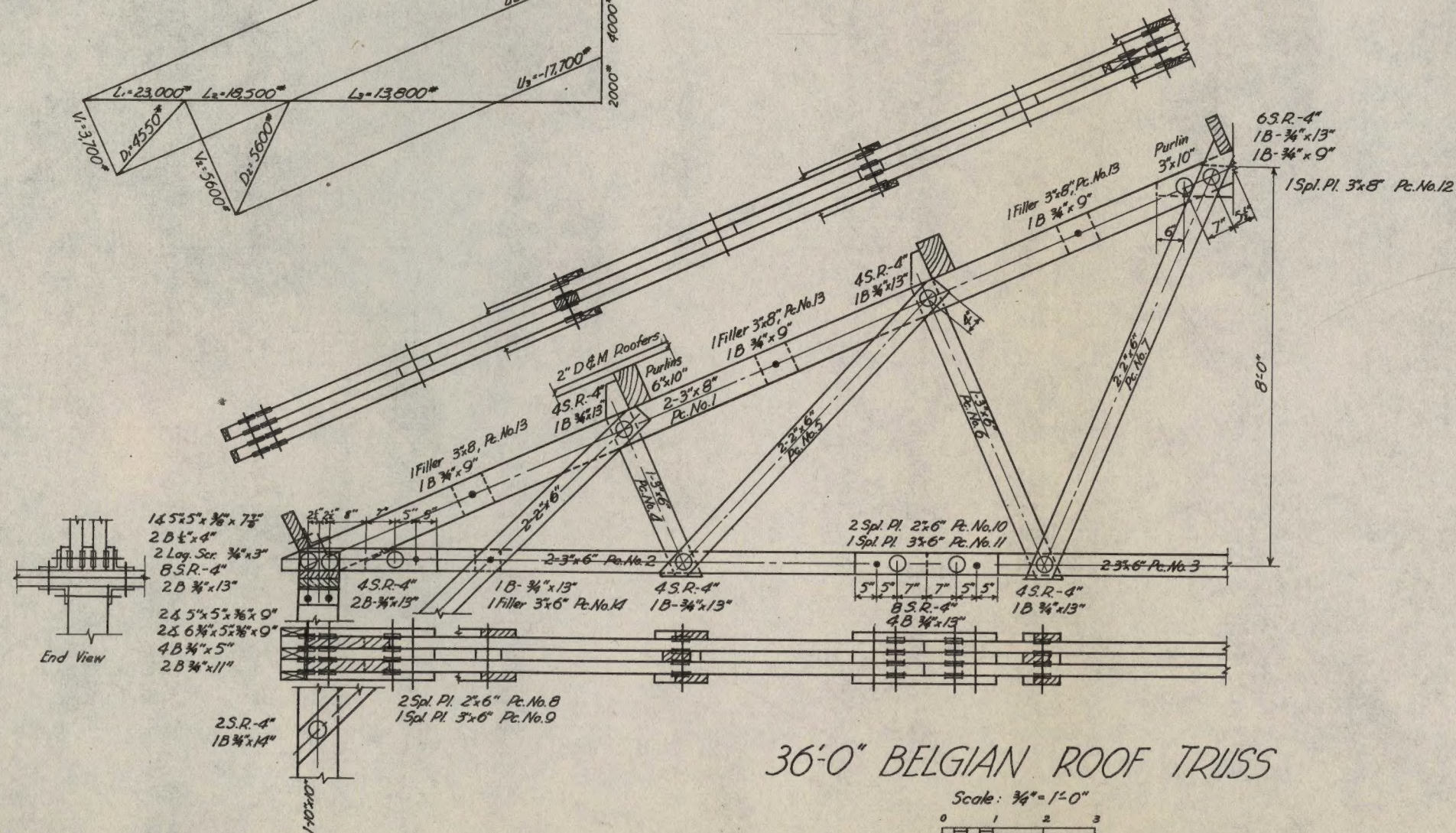
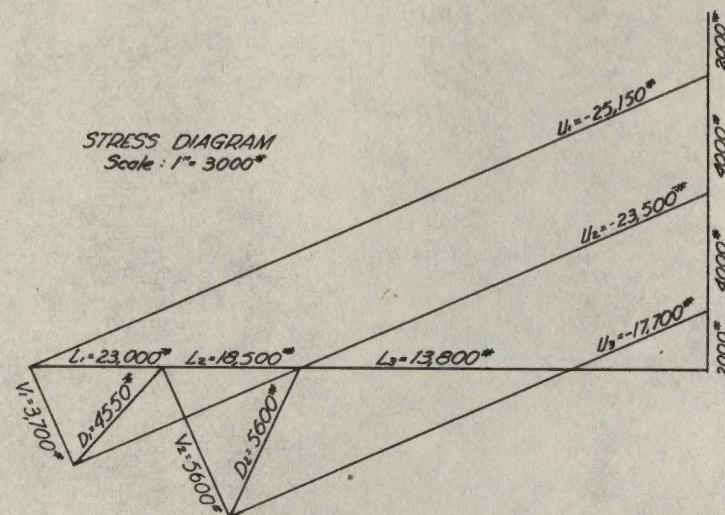
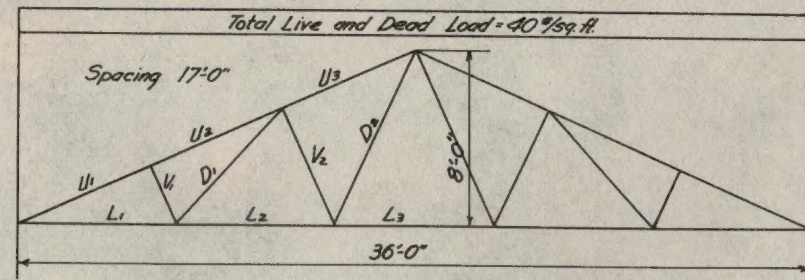
Connectors shall be TECO Split Rings as manufactured by the Timber Engineering Company, Washington, D. C.

MATERIALS LIST PER TRUSS						
LUMBER CUTTING BILL						
Mk.	Size	Length	Make	Cut From	Order	F.B.M.
1	2"x10"	19'-2"	4	20'-0"	4	134
2	2"x8"	14'-8"	4	16'-0"	4	80
3	3"x6"	4'-7 1/2"	2	10'-0"	1	15
4	2"x6"	9'-2"	4	10'-0"	4	40
5	3"x6"	7'-8"	2	16'-0"	1	24
6	2"x6"	11'-4 1/2"	4	12'-0"	4	48
8	3"x10"	2'-8"	1	8'-0"	1	20
9	2"x8"	3'-8 1/2"	4	16'-0"	1	22
10	3"x8"	3'-8 1/2"	2	12'-0"	1	24
11	3"x8"	3'-10"	1	Pc. No. 10		
12	3"x10"	0'-10"	6	Pc. No. 8		
Total F.B.M. - 413						
CONNECTORS						
No.	Item	Size				
80	Split Rings	4"				
HARDWARE						
No.	Item	Size				
4	Machine Bolts	1/2"x11"				
14	" "	3/8"x7"				
16	" "	3/4"x11"				
8	Plate Washers	2"x2"x1/2"				
60	" "	3"x3"x3/8"				

Typical design for use of  
Engineers and Architects.

TIMBER ENGINEERING COMPANY  
WASHINGTON, D. C.  
PRATT TRUSS  
SPAN: 31'-2" RISE: 9'-1"  
SCALE 3/4" = 1'-0" SHEET 1 OF 1  
DATE  
DESIGNED BY D.S.H. 3/5/41  
CHECKED BY W.B.M. 2/2/42  
TRACED BY W.H.A. 6/23/42  
O.K. N.M. 2/2/42  
DRAWING NO.  
333





**NOTES:**

**GENERAL-**

This truss has been designed for loads at top chord panel points only. Purlins 6"x10", with 2" D and M roofers, are satisfactory.

**LUMBER-**

Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. in. as follows:

880\* Compression parallel to grain.

1200\* Extreme fiber in bending.

1,600,000<sup>2</sup> Modulus of Elasticity.

Allowable unit working stresses for commercial grades are given in the leaflet, "Working Stresses for Structural Lumber and Timber," or are available from the Regional Lumber Manufacturers Associations.

## TIMBER CONNECTORS

Connectors shall be TECO Split Rings as manufactured by the Timber Engineering Company, Washington, D.C.

MATERIALS LIST PER TRUSS						
LUMBER CUTTING BILL						
Mk.	Size	Length	Make	Cut From	Order	F.B.
1	3"x8"	20'-7"	4	22'-0"	4	170
2	3"x6"	11'-2"	4	12'-0"	4	72
3	3"x6"	12'-0"	2	12'-0"	2	36
4	3"x6"	4'-3"	2	12'-0"	2	18
5	2"x6"	8'-0"	4	18'-0"	4	72
6	3"x6"	7'-2"	2	Pc. No. 4		
7	2"x6"	9'-6 $\frac{1}{2}$ "	4	Pc. No. 5		
8	2"x6"	3'-0"	4	12'-0"	1	12
9	3"x6"	3'-0"	2	12'-0"	1	18
10	2"x6"	2'-10"	4	12'-0"	1	12
11	3"x6"	2'-10"	2	Pc. No. 9		
12	3"x8"	3'-0"	1	4'-0"	1	8
13	3"x8"	0'-8"	6	Pc. No. 1		
14	3"x6"	0'-6"	2	Pc. No. 2		
Total F.B.M.						424
CONNECTORS						
No.	Item			Size		
84	Split Rings			4"		
HARDWARE						
No.	Item			Size		
8	Machine Bolts			¾"x9"		
26	"			¾"x15"		
60	Plate Washers			3"x3"x¾"		
4	Steel Angles			5.5"x3"x¾"		

HARDWARE		
No.	Item	Size
8	Machine Bolts	3/4" x 9"
26	" "	3/4" x 15"
60	Plate Washers	3" 3" x 3/4"
4	Steel Nipples	5" 5" x 3/4"

Typical design for use of  
Engineers and Architects.

**TIMBER ENGINEERING COMPANY**  
WASHINGTON, D. C.

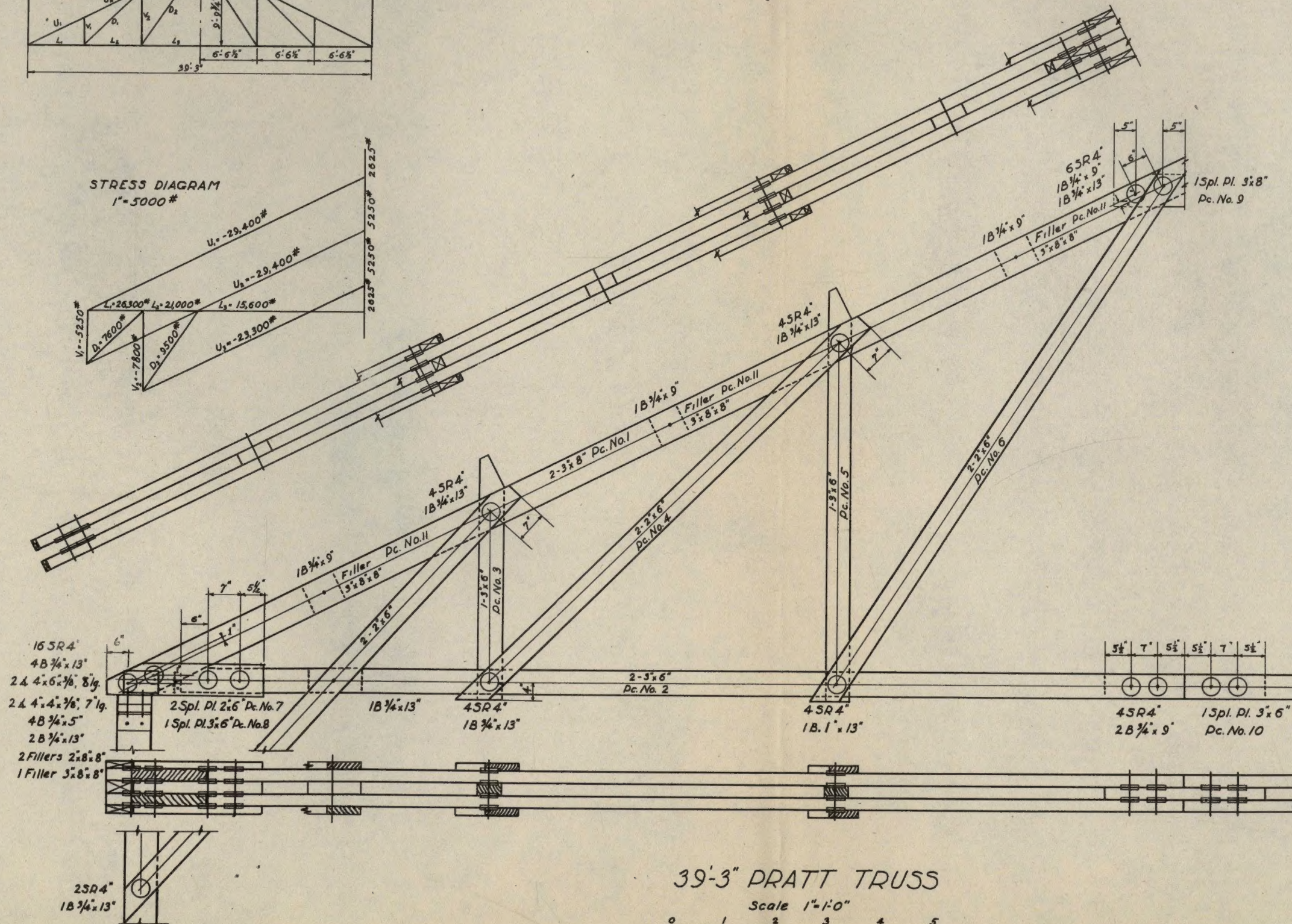
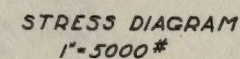
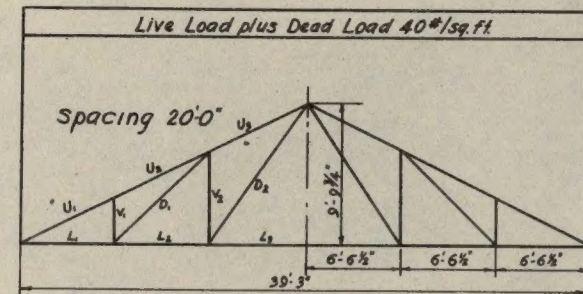
*BELGIAN ROOF TRUSS*  
*SPAN 36'-0" RISE 8'-0"*

SCALE  $\frac{3}{4}" = 1'-0"$  SHEET 1 OF 1

DESIGNED BY <i>D.S.H</i>	DATE <i>3/14/90</i>	DRAWING NO. <i>3/4</i>
CHECKED BY <i>W.B.M.</i>	<i>12/29/91</i>	
TRACED BY <i>D.S.</i>	<i>1/13/92</i>	

OKN.M. W.B.M





NOTES

## GENERAL

*This truss is to be used with purlins at panel points only. Purlins 6"x12" are satisfactory.*

LUMBER

Lumber shall be of a structural grade with minimum allowable working stresses in pounds per sq. in. as follows:

880\* Compression parallel to grain  
1200\* Extreme fiber in bending  
1,600,000 Modulus of Elasticity  
Allowable unit working stresses  
for commercial grades of lumber are  
given in the leaflet "Working  
Stresses for Structural Lumber  
and Timber", or are available  
from the Regional Lumber  
Manufacturers Associations.

## TIMBER CONNECTORS

Connectors shall be *TECO* split rings as manufactured by the *Timber Engineering Company*, Washington, D.C.

MATERIALS LIST PER TRUSS					
LUMBER CUTTING BILL(345)					
MK.	Size	Length	Make	Cut From	Order F.B.M.
1	3"x8"	22'-5"	4	24'-0"	192
2	3"x6"	18'-11"	4	20'-0"	120
3	3"x6"	4'-8"	2	14'-0"	1 21
4	2"x6"	10'-6"	4	24'-0"	4 96
5	3"x6"	7'-11"	2	20'-0"	1 30
6	2"x6"	12'-7"	4	Pc. No. 4	
7	2"x6"	2'-11"	4	12'-0"	1 12
8	3"x6"	2'-11"	2	Pc. No. 3	
9	3"x8"	2'-8"	1	10'-0"	1 20
10	3"x6"	3'-0"	1	Pc. No. 5	
11	3"x8"	0'-8"	6	Pc. No. 5	
Total F.B.M.					491

CONNECTORS		
No.	Item	Size
84	Split Rings	4"
HARDWARE		
2.	Machine Bolts	1" x 13"
12	Machine Bolts	3/4" x 9"
16	"	3/4" x 13"
52	Plate Washers	3 3/4" x 3/16"
4	Angles	4 x 6 x 3/8-5/8"

*Typical Design for use of  
Engineers and Architects*

TIMBER ENGINEERING COMPANY  
 WASHINGTON, D. C.  
**PRATT TRUSS**  
 SPAN - 39'-3" CENTER HGT 9'-9"  
 SCALE 1" = 10" SHEET / OF /  
 DATE 5/5/57 DRAWING NO. 266  
 DESIGNED BY J.H. Carr  
 CHECKED BY A.G.D.  
 TRACED BY R.W.A.  
 O.K. N.M. A.G.D.  
 REVISED BY 11/27/62

SCALE 1"=120" SHEET / OF /

DATE	DRAWING No.
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DESIGNED BY J.H. Carr 5/5/37  
CHECKED BY J.H. Carr 5/5/37

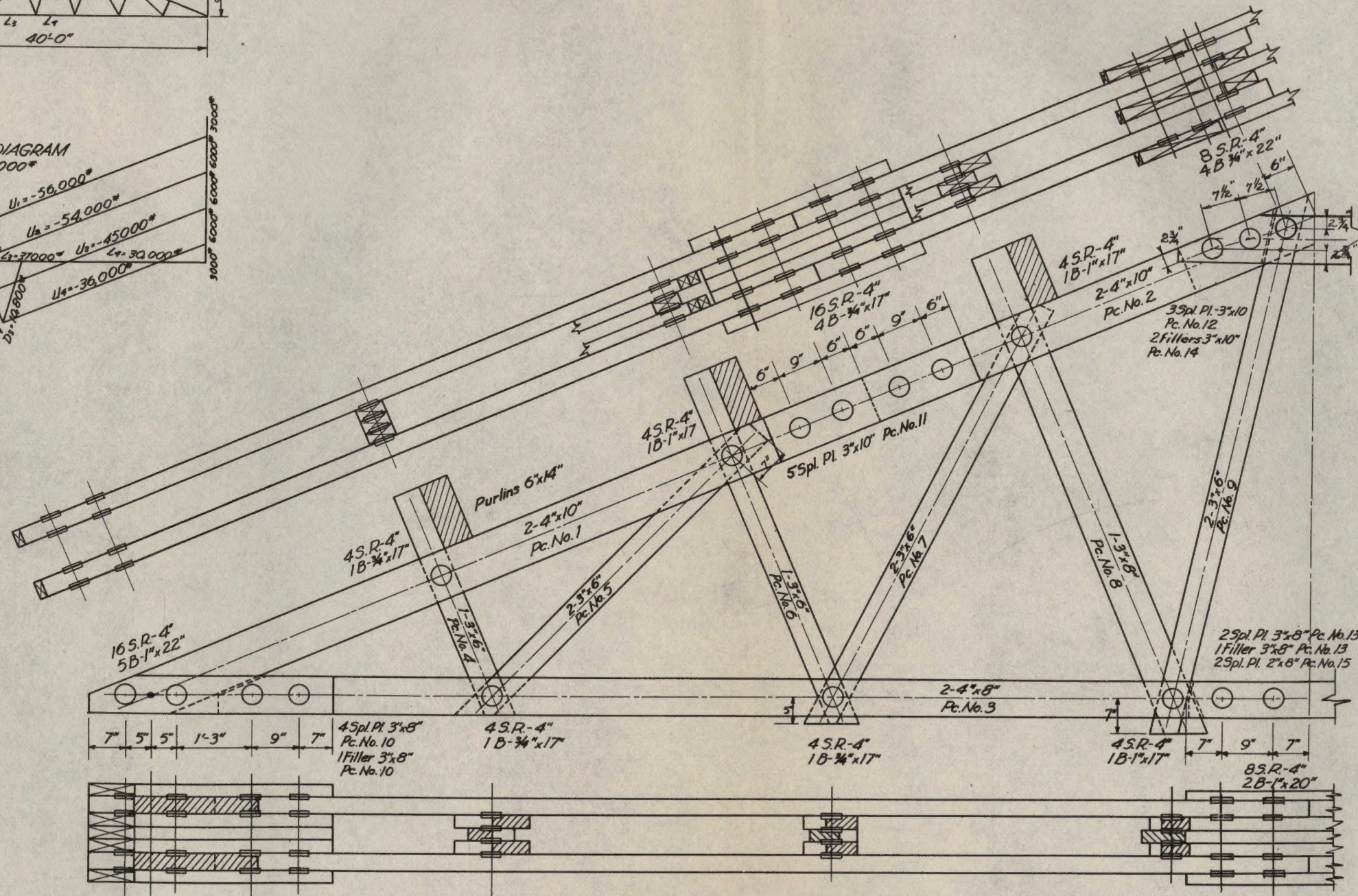
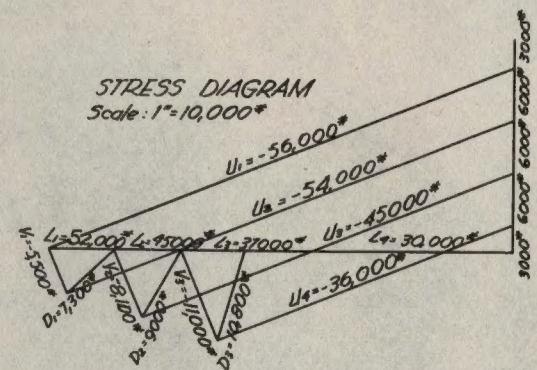
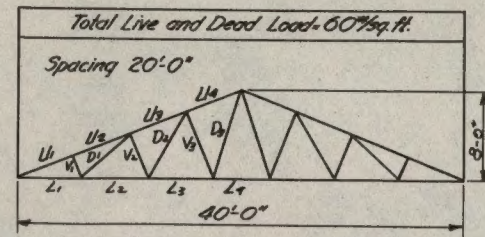
CHECKED BY <i>A.G.D.</i>	<i>10/13/41</i>	<i>200</i>
TRACED BY <i>R.W.A.</i>	<i>10/20/41</i>	

O. K. N. M. A. G. D. 10/25/41

REVISED D.W. 11/17/42

266





# 40'-0" BELGIAN TRUSS

Scale: 1"=1'-0"  
Scale in feet

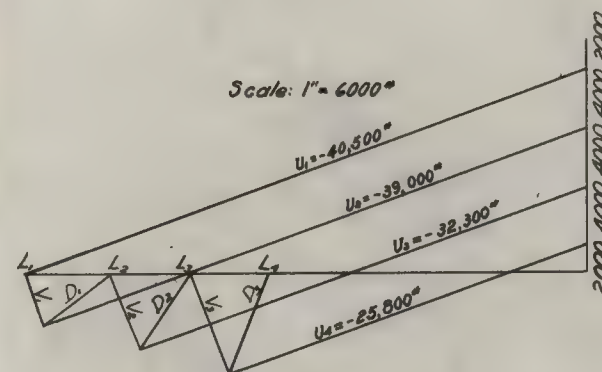
NOTES:  
LUMBER-  
Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. in. as follows:  
880\* Compression parallel to grain.  
1200\* Extreme fiber in bending.  
1600000\* Modulus of Elasticity  
Allowable unit working stresses for commercial grades are given in the leaflet "Working Stresses for Structural Lumber and Timber" or are available from the Regional Lumber Manufacturers Associations.  
CONNECTORS-  
Connectors shall be TECO Split Rings as manufactured by the Timber Engineering Company, Washington, D.C.

MATERIALS LIST PER TRUSS						
LUMBER CUTTING BILL						
Mk.	Size	Length	Make	Cut From	Order	F.B.M.
1	4"x10"	19'-9"	4	14'-0"	4	188
2	4"x10"	8'-0"	4	16'-0"	2	108
3	4"x8"	17'-10"	4	18'-0"	4	192
4	3"x6"	4'-1 1/2"	2	18'-0"	2	54
5	3"x6"	6'-10"	4	Pc. No. 4		
6	3"x6"	6'-5"	2	14'-0"	1	21
7	3"x6"	8'-0"	4	16'-0"	2	48
8	3"x8"	8'-0"	2	18'-0"	1	36
9	3"x6"	9'-4"	4	20'-0"	2	60
10	3"x8"	4'-0"	10	20'-0"	2	80
11	3"x10"	3'-6"	10	18'-0"	2	90
12	3"x10"	4'-8"	3	20'-0"	1	50
13	3"x8"	4'-0"	3	12'-0"	1	24
14	3"x10"	1'-6"	4	Pc. No. 12		
15	2"x8"	4'-0"	2	8'-0"	1	11
Total F.B.M.						962
CONNECTORS						
No.	Item	Size				
144	Split Rings	4"				
HARDWARE						
No.	Item	Size				
14	Machine Bolts	3/4"x17"				
8	"	3/4"x22"				
6	"	1"x17"				
4	"	1"x20"				
10	"	1"x22"				
76	Plate Washers	3"x3"x3/16"				

Typical design for use of  
Engineers and Architects.

TIMBER ENGINEERING COMPANY WASHINGTON, D.C.	
BELGIAN TRUSS	
SPAN 40'-0" RISE 8'-0"	
SCALE 1"=1'-0"	SHEET 1 OF 1
DESIGNED BY D.S.H. 11/1/41	DATE 11/1/41
CHECKED BY W.B.M. 2/1/42	DRAWING NO. 387
O.K. N.M.	
Revised 8-3-42 D.W.	





$L_1 = 38,000^{\text{mm}}$   
 $L_2 = 32,000^{\text{mm}}$   
 $L_3 = 26,300^{\text{mm}}$   
 $L_{\text{avg}} = 21,500^{\text{mm}}$   
 $D_1 = 5,700^{\text{mm}}$   
 $D_2 = 6,300^{\text{mm}}$   
 $D_3 = 7,500^{\text{mm}}$

LUMBER:-  
Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. in. as follows:  
880\* Compression parallel to grain.  
1200\* Extreme fiber in bending.  
1,600,000\* Modulus of Elasticity.  
Allowable unit working stresses for commercial grades are given in the leaflet "Working Stresses for Structural Lumber and Timber" or are available from the Regional Lumber Manufacturers Association  
CONNECTORS:-  
Connectors shall be TEGO split Rings as manufactured by the Timber Engineering Company Washington D. C.

Scale: 1" = 6000"

U<sub>1</sub> = 40,500"  
 U<sub>2</sub> = 39,000"  
 U<sub>3</sub> = 32,300"  
 U<sub>4</sub> = 25,800"

V<sub>1</sub> = 3,600"  
 V<sub>2</sub> = 5,500"  
 V<sub>3</sub> = 7,500"

16-4" S.R.  
 4B-3/4"x13"

4-4" S.R.  
 1B-3/4"x13"

2-4" S.R.  
 1B-3/4"x9"

2-3"x12"  
 Pt. No. 1

1B-3/4"x9"  
 Pt. No. 16  
 3"x8" Filler

8-4" S.R.  
 2B-3/4"x13"

2-3"x8"  
 Pt. No. 3

4-4" S.R.  
 1B-3/4"x13"  
 Extend for  
 Knee Brace

2-2"x6"  
 Pt. No. 5

2-2"x12" Spl. Pl.  
 Pt. No. 10

2-2"x12" Spl. Pl.  
 Pt. No. 11

4-4" S.R.  
 1B-3/4"x13"

2-3"x12"  
 Pt. No. 2

1B-3/4"x9"

6-4" S.R.  
 1B-3/4"x9" & 1B-3/4"x13"

1-3"x6"  
 Pt. No. 8

1-3"x6"  
 Pt. No. 9

1-3"x8" Spl. Pl.  
 Pt. No. 15

8-4" S.R.  
 4B-3/4"x9

1-3"x10" Spl. Pl.  
 Pt. No. 12

1-3"x8" Spl. Pl.  
 Pt. No. 14

2-2"x8" Spl. Pl.  
 Pt. No. 13

1-3"x8" Spl. Pl.  
 Pt. No. 14

TOTAL  
 CONN.  
 No.  
 128  
 HARDW.  
 No.  
 14  
 28  
 84

Typical design for use of  
Engineers and Architects

**TIMBER ENGINEERING COMPANY**  
**WASHINGTON, D. C.**

44'-0" ROOF TRUSS  
Span = 44'-0" Rise = 8'-0"

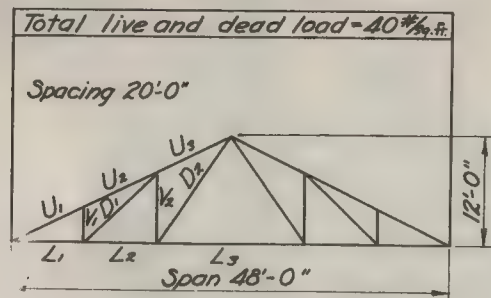
Scale = 1" = 1'-0" SHEET 1 OF 1

CHECKED BY STL 2/5/45  
DESIGNED BY D.S.H 6/19/45  
TRACED BY B.A.I 9/2/45

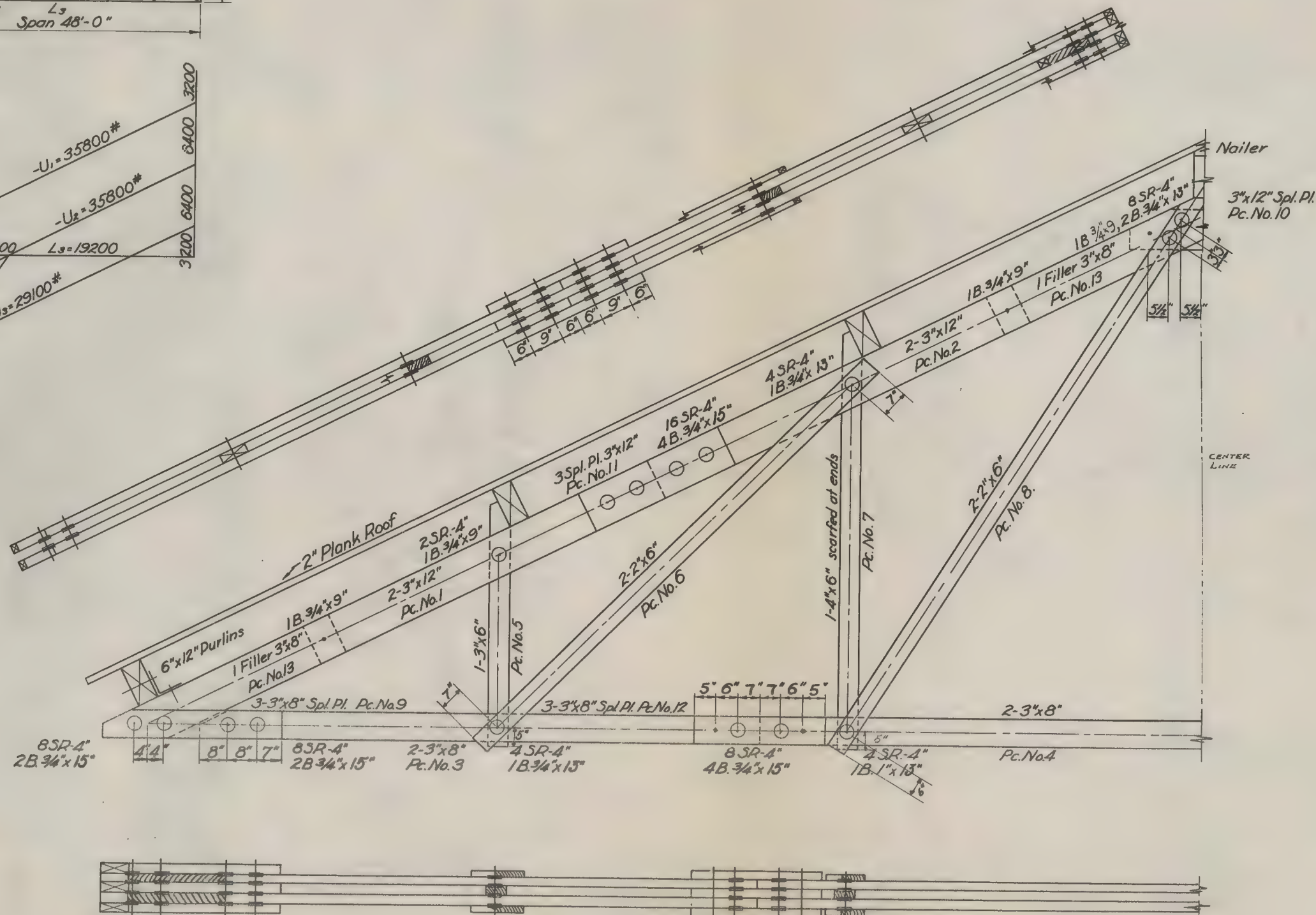
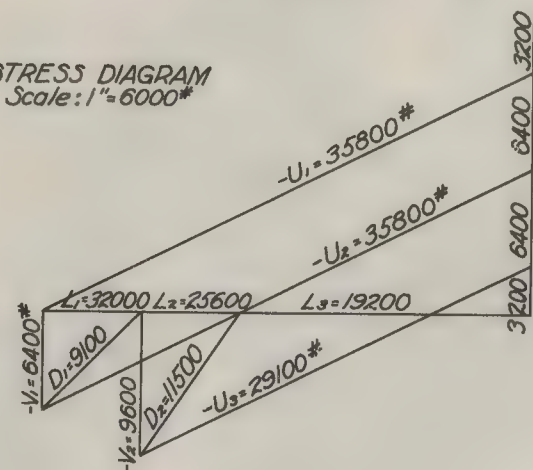
DRAWING NO  
357

OK - NM





STRESS DIAGRAM  
Scale: 1" = 6000\*



48'-0" PRATT TRUSS  
Scale: 3/4" = 1'-0"  
0 1 2 3 4  
Scale in Feet

NOTES:  
GENERAL

This truss is designed for loads at top chord panel points only.

LUMBER  
Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. in. as follows:  
880\* Compression parallel to grain.  
1200\* Extreme fiber in bending.  
1,600,000\* Modulus of elasticity  
Allowable unit working stresses for commercial grades of lumber are given in the leaflet, "Working Stresses for Structural Lumber and Timber," or are available from the Regional Lumber Manufacturers Associations.

TIMBER CONNECTORS  
Connectors shall be TECO split rings as manufactured by the Timber Engineering Company, Washington, D.C.

MATERIALS LIST PER TRUSS  
LUMBER CUTTING BILL (\$4.5)

Mk.	Size	Length	Made	Cut From	Order	F.B.M.
1	3"x12"	14'-0"	4	14'-0"	4	168
2	3"x12"	14'-2"	4	16'-0"	4	192
3	3"x8"	12'-10"	4	14'-0"	4	112
4	3"x8"	20'-3"	2	22'-0"	2	88
5	3"x6"	5'-7"	2	12'-0"	1	18
6	2"x6"	12'-8"	4	14'-0"	4	56
7	4"x6"	9'-7"	2	10'-0"	2	40
8	2"x6"	15'-3"	4	16'-0"	4	64
9	3"x8"	4'-1"	6	14'-0"	2	56
10	3"x12"	3'-6"	1	Pc.No.1		
11	3"x12"	3'-6"	6	14'-0"	2	84
12	3"x8"	3'-0"	6	18'-0"	1	36
13	3"x8"	0'-8"	4	Pc.No.3		

Total F.B.M. - 914

CONNECTORS

No.	Item	Size
124	Split Rings	4"

HARDWARE

No.	Item	Size
2	Machine Bolts	1"x13"
8	"	3/4"x9"
8	"	3/4"x13"
24	"	3/4"x15"
80	Plate Washers	3"x3"x3/16"

Typical design for use of  
Engineers and Architects.

TIMBER ENGINEERING COMPANY  
WASHINGTON, D. C.

PRATT TRUSS  
SPAN-48'-0" RISE 12'-0"

SCALE 3/4" = 1'-0" SHEET 1 OF 1

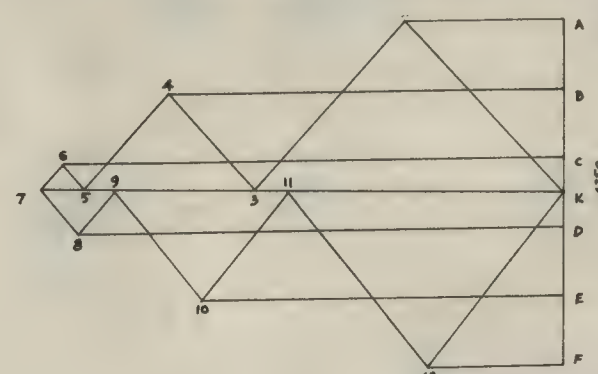
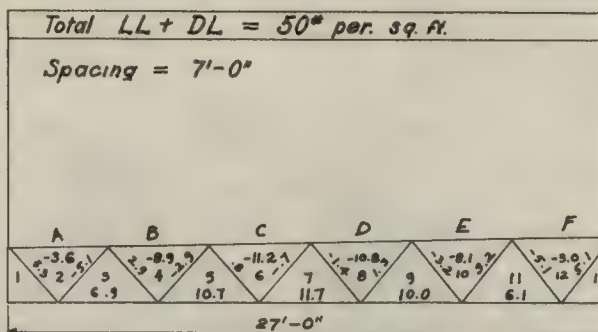
DESIGNED BY J. Carr 1/20/40  
CHECKED BY RNC 12/13/41  
DATE  
DRAWING NO. 299

O.K.-N.M., S.H.C.  
Rev. 8.5.4. 10-26-42

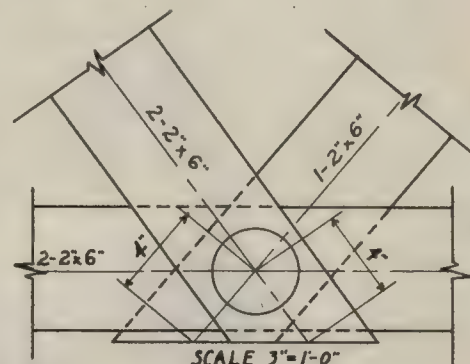








Stress Diagram  
SCALE: 1" = 2 Kips

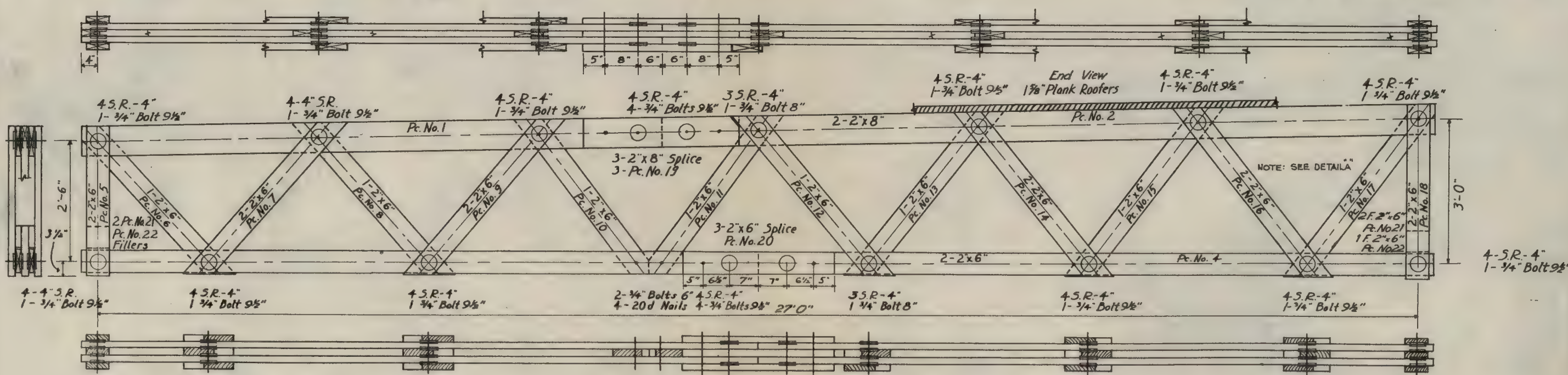


Detail of A  
SCALE 3" = 1'-0"

### NOTES

**LUMBER**  
Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. inch as follows:  
880\* Compression parallel to grain.  
1200\* Extreme fiber in bending.  
1,600,000\* Modulus of Elasticity.  
Allowable working stresses for commercial grades of Lumber are given in the leaflet "Working Stresses for Structural Lumber and Timber," or are available from the Regional Lumber Manufacturer's Association.  
**CONNECTORS:**  
Connectors shall be TECO split rings as manufactured by the Timber Engineering Company Washington, D. C.  
**CAMBER.**  
The proper camber may be introduced into this truss by raising the lower chord 1/4" at the center during fabrication.

MATERIALS LIST PER TRUSS						
LUMBER CUTTING BILL						
Mk.	Size	Length	Make	Cut From	Order	F.B.M.
1	2"x8"	11'-10"	2	12'-0"	2	32
2	2"x8"	15'-10"	2	16'-0"	2	44
3	2"x6"	13'-10"	2	14'-0"	2	28
4	2"x6"	13'-10"	2	14'-0"	2	28
5	2"x6"	3'-2"	2	18'-0"	2	36
6	2"x6"	4'-3"	1	18'-0"	1	18
7	2"x6"	4'-7"	2	Pc. No. 5		
8	2"x6"	4'-7"	1	Pc. No. 6		
9	2"x6"	4'-8"	2	Pc. No. 5		
10	2"x6"	4'-3"	1	Pc. No. 6		
11	2"x6"	4'-3"	1	Pc. No. 6		
12	2"x6"	4'-8"	1	20'-0"	1	20
13	2"x6"	4'-8"	1	Pc. No. 12		
14	2"x6"	4'-8"	2	Pc. No. 5		
15	2"x6"	4'-8"	1	Pc. No. 12		
16	2"x6"	4'-9"	2	10'-0"	2	20
17	2"x6"	4'-8"	1	Pc. No. 12		
18	2"x6"	3'-8"	2	Pc. No. 16		
19	2"x8"	3'-2"	3	10'-0"	1	14
20	2"x6"	3'-1"	3	10'-0"	1	10
21	2"x6"	0'-6"	8	Pc. No. 13		
22	2"x6"	1'-0"	2	Pc. No. 12		
TOTAL F. B. M. = 250						
CONNECTORS						
No.	Item	Size				
64	TECO Split Rings	4"				
HARDWARE						
No.	Item	Size				
20	Machine Bolts	3/4" x 9 1/2"				
2	Machine Bolts	3/4" x 6"				
48	Plate Washers	3" x 3" x 3/16"				
2	Machine Bolts	3/4" x 8"				



## 27'-0" WARREN TRUSS

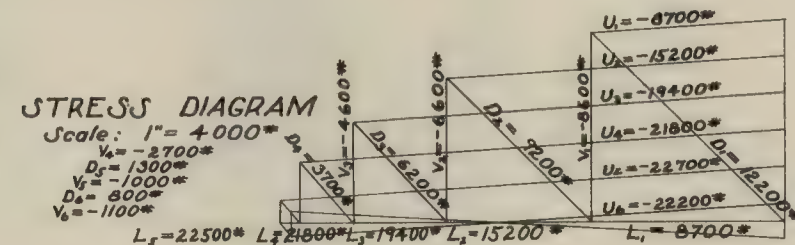
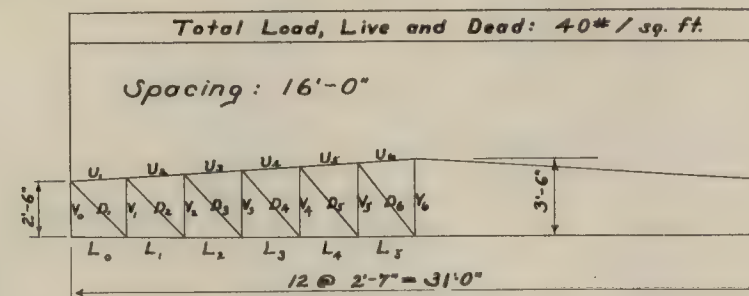
Scale 1" = 1'-0"

Scale in feet

Typical design for use of  
Engineers and Architects

TIMBER ENGINEERING COMPANY WASHINGTON, D. C.	
WARREN TRUSS	
SPAN 27'-0"	RISE 3'-0"
SCALE 1" = 1'-0"	SHEET 1 OF 1
DESIGNED BY E.S.L. 1-25-41	DRAWING NO. 394
CHECKED BY E.T.R. 2-6-42	
TRACED BY R.I. 2-25-42	





## NOTES

### LUMBER:

Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. in. as follows:  
 880\* Compression parallel to grain.  
 1200\* Extreme fiber in bending.  
 1600000\* Modulus of elasticity

Allowable unit working stresses for commercial grades are given in the folder, "Working Stresses for Structural Lumber and Timber", or are available from the Regional Lumber Manufacturers Association.

### CONNECTORS:

Connectors shall be TECO split rings as manufactured by the Timber Engineering Company, Washington, D.C.

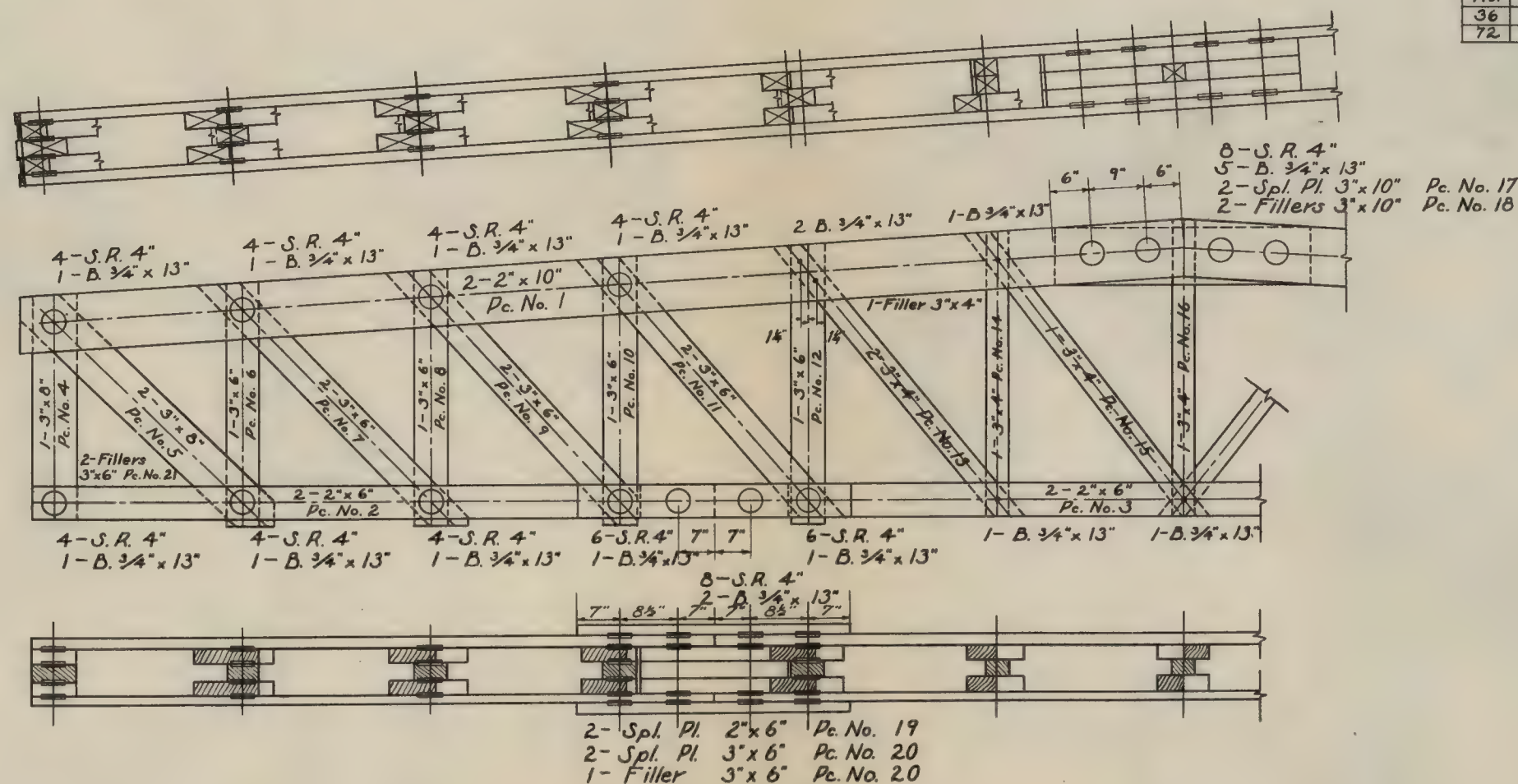
## MATERIALS LIST PER TRUSS

No.	Size	Length	Make	Cut From	Order	F.B.M.
1	2"x10"	15'-9 1/2"	4	16'-0"	4	108
2	2"x6"	9'-4"	4	20'-0"	2	40
3	2"x6"	12'-10"	2	14'-0"	2	28
4	3"x8"	3'-1 1/2"	2	8'-0"	1	16
5	3"x8"	4'-8 1/2"	4	20'-0"	1	40
6	3"x6"	3'-5"	2	14'-0"	1	21
7	3"x6"	5'-0"	4	20'-0"	1	30
8	3"x6"	3'-7"	2	Pc. No. 6		
9	3"x6"	4'-11"	4	20'-0"	2	60
10	3"x6"	3'-9"	2	16'-0"	2	48
11	3"x6"	5'-1"	4	Pc. No. 9		
12	3"x6"	3'-10 1/2"	2	Pc. No. 10		
13	3"x4"	5'-0"	4	20'-0"	1	20
14	3"x4"	3'-11"	2	12'-0"	2	48
15	3"x4"	5'-2"	2	Pc. No. 14		
16	3"x4"	4'-1"	1	Pc. No. 14		
17	3"x10"	3'-6"	2	10'-0"	1	25
18	3"x10"	1'-6"	2	Pc. No. 17		
19	2"x6"	3'-9"	4	16'-0"	1	16
20	3"x6"	2'-0"	6	Pc. No. 10		
21	3"x6"	0'-7 1/2"	4	Pc. No. 10		

Total F. B. M. = 500

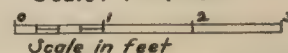
### CONNECTORS

No.	Item	Size
104	TECO Split Rings	4"
HARDWARE		
No.	Item	Size
36	Machine Bolts	3/4"x13"
72	Plate Washers	3"x3"x3/16"



## 31'-0" FLAT-TOP PRATT TRUSS

Scale: 1" = 1'-0"



Typical Design for use of  
Engineers and Architects

TIMBER ENGINEERING COMPANY  
WASHINGTON, D. C.

31'-0" FLAT PRATT TRUSS

SPACING 16'-0" RISE 3'-6"

SCALE 1" = 1'-0" SHEET 1 OF 1

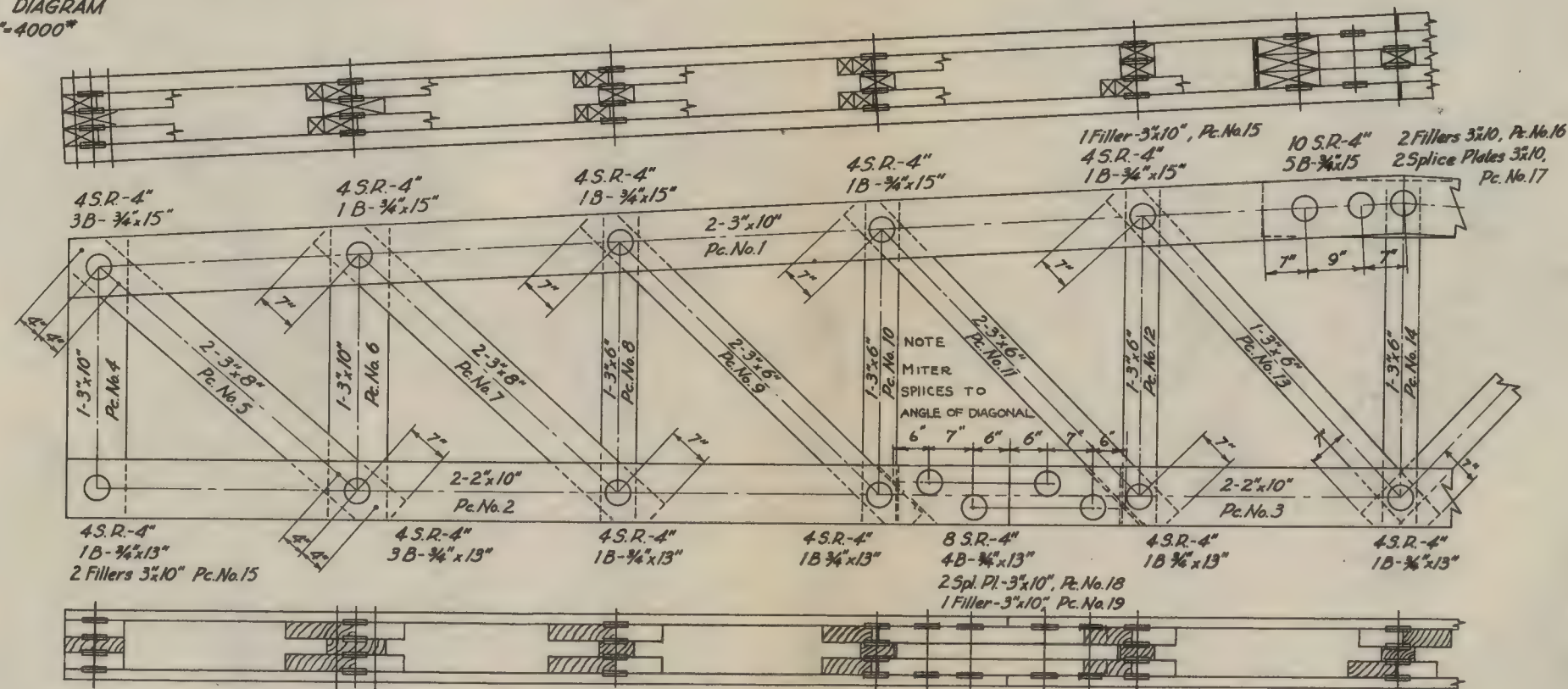
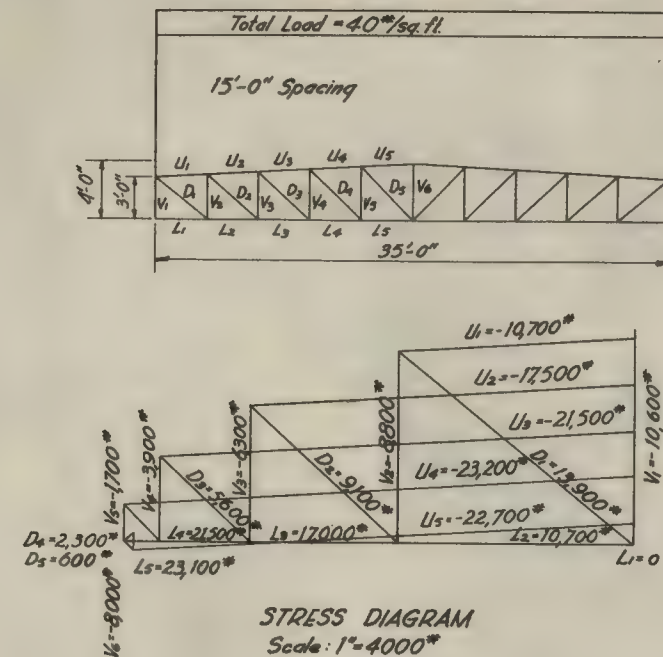
DESIGNED BY DSH 9-23-41 DATE

CHECKED BY DTA 1-18-42 DRAWING NO.

TRACED BY AWS 3-2-42 374

REV. E.S.L. 10-26-42





## 35'-0" FLAT TOP TRUSS

Scale: 1" = 1'-0"

Scale in Feet

### NOTES:

#### GENERAL-

This truss has been designed for loads at top chord panel points only. Purlins 6"x12" are satisfactory.

#### LUMBER-

Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. in. as follows:

880\* Compression parallel to grain.

1200\* Extreme fiber in bending.

1,600,000\* Modulus of Elasticity.

Allowable unit working stresses for commercial grades are given in the leaflet "Working Stresses for Structural Lumber and Timber" or are available from the Regional Lumber Manufacturers Associations.

#### SPLIT RING CONNECTORS

Connectors shall be TECO Split Rings as manufactured by the Timber Engineering Company, Washington, D. C.

#### MATERIALS LIST PER TRUSS

##### LUMBER CUTTING BILL

Mk.	Size	Length	Make	Cut from	Order	F.B.M.
1	3"x10"	18'-0"	4	18'-0"	4	180
2	2"x10"	12'-8"	4	14'-0"	4	96
3	2"x10"	10'-6"	2	12'-0"	2	40
4	3"x10"	3'-10"	2	16'-0"	1	40
5	3"x8"	5'-9"	4	12'-0"	2	48
6	3"x10"	4'-0"	2	Pc. No. 4		
7	3"x8"	5'-11"	4	12'-0"	2	48
8	3"x6"	4'-3"	2	20'-0"	2	60
9	3"x6"	6'-0"	4	14'-0"	1	21
10	3"x6"	4'-5"	2	Pc. No. 8		
11	3"x6"	6'-1"	4	26'-0"	1	39
12	3"x6"	4'-7"	2	Pc. No. 8		
13	3"x6"	6'-2"	2	Pc. No. 8		
14	3"x6"	4'-9"	1	6'-0"	1	9
15	3"x10"	0'-9 1/2"	6	16'-0"	1	40
16	3"x10"	1'-8"	2	Pc. No. 15		
17	3"x10"	5'-10"	2	Pc. No. 15		
18	3"x10"	3'-6"	4	20'-0"	1	50
19	3"x10"	3'-0"	2	Pc. No. 18		
Total F.B.M. 671						

#### CONNECTORS

No.	Item	Size
110	Split Rings	4"

#### HARDWARE

No.	Item	Size
23	Machine Bolts	3/4" x 1 1/2"
19	"	3/4" x 1 1/2"
84	Plate Washers	3" x 5" x 3/16"

Typical design for use of  
Engineers and Architects.

TIMBER ENGINEERING COMPANY  
WASHINGTON, D. C.

### FLAT TOP TRUSS

SPAN = 35'-0" RISE = 4'-0"

SCALE 1" = 1'-0" SHEET 1 OF 1

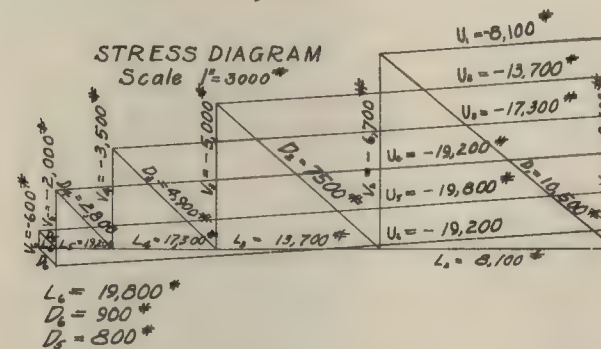
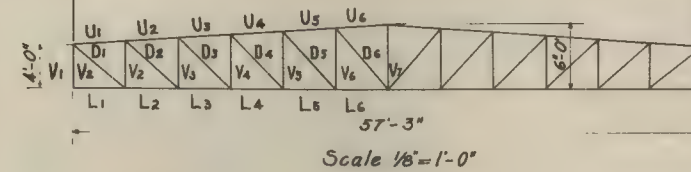
DATE 1/29/40  
DESIGNED BY J.H.C.  
CHECKED BY M.M.P.  
TRACED BY J.H.A./1/13/40

DRAWING NO.  
300

O.K. N.M. J.H.C.  
REVISED 11-3-42 D.W.



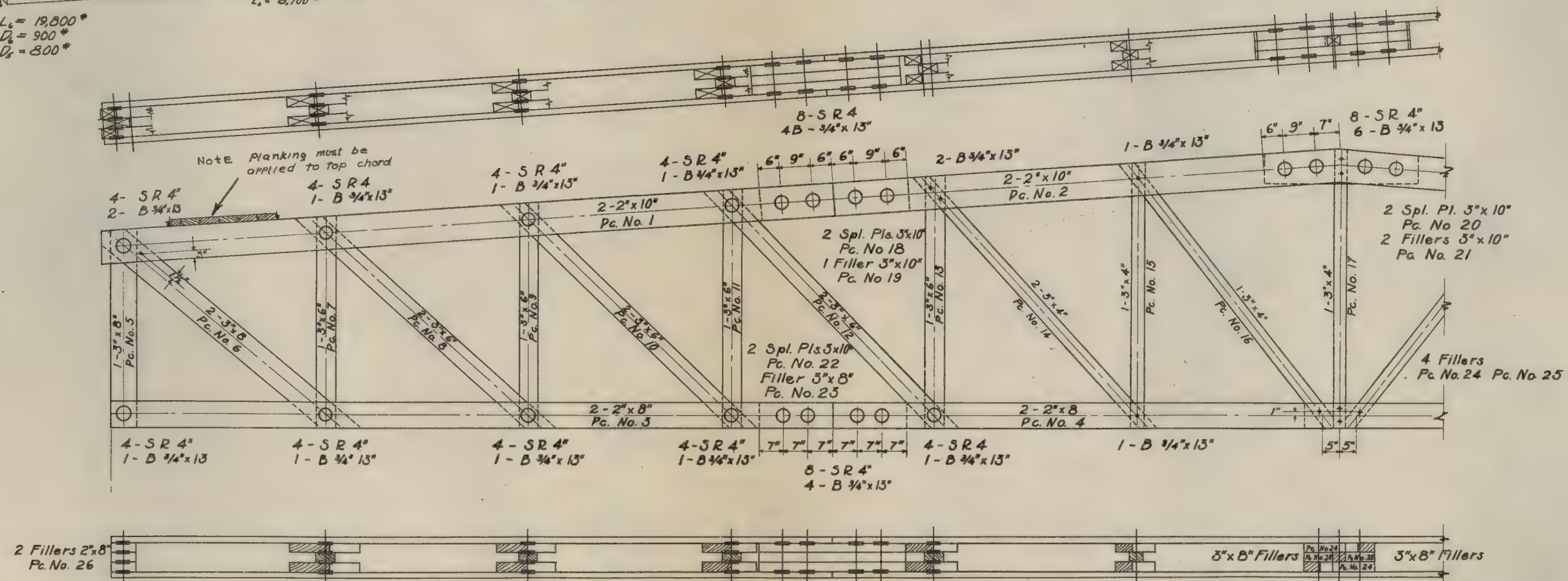
Spacing = 7'-0"



The proper camber may be introduced into this truss by raising the lower chord  $1\frac{1}{2}$ " at the center during fabrication.


Mk.	Size	Length	Made	Cut From	Order	F. B. M.	Mk.	Size	Length	Made	Cut From	Order	F. B. M.
1	2"x10"	17'-3"	4	18'-0"	4	120	14	3"x4"	8'-3"	4	18'-0"	2	36
2	2"x10"	12'-0"	4	12'-0"	4	80	15	3"x4"	6'-4"	2	14'-0"	1	14
3	2"x8"	17'-1 1/2"	4	18'-0"	4	96	16	3"x4"	8'-0"	4	16'-0"	2	32
4	2"x8"	24'-0"	2	24'-0"	2	64	17	3"x4"	6'-7 1/2"	1	8'-0"	1	8
5	3"x8"	4'-9"	2	14'-0"	1	28	18	3"x10"	3'-6"	4	14'-0"	1	35
6	3"x8"	7'-6"	4	16'-0"	2	64	19	3"x10"	3'-6"	2	18'-0"	1	45
7	3"x6"	5'-0"	2	22'-0"	1	33	20	3"x10"	3'-7 1/2"	2	R. No. 19	-	-
8	3"x6"	7'-11"	4	16'-0"	2	48	21	3"x10"	1'-8"	2	R. No. 19	-	-
9	3"x6"	5'-4"	2	22'-0"	1	33	22	3"x8"	3'-6"	4	22'-0"	1	44
10	3"x6"	8'-0"	4	16'-0"	2	48	23	3"x8"	3'-6"	2	R. No. 22	-	-
11	3"x6"	5'-8"	2	R. No. 9	-	-	24	3"x8"	0'-11 1/2"	2	R. No. 5	-	-
12	3"x6"	8'-5"	4	18'-0"	2	54	25	3"x8"	0'-8"	2	R. No. 5	-	-
13	3"x6"	6'-0"	2	R. No. 7	-	-	26	2"x8"	0'-7"	4	R. No. 3	-	-

			TOTAL		882
CONNECTORS			HARDWARE		
No.	Item	Size	No.	Item	Size
112	Teco Split Rings	4"	54	Machine Bolts	3/4" x 13"
			108	Plate Washers	3" x 3 1/2"



57'-3" FLAT PRATT TRUSS

Scale:  $\frac{3}{4}" = 1'-0"$



Scale in feet

Typical Design for use of  
Architects & Engineers

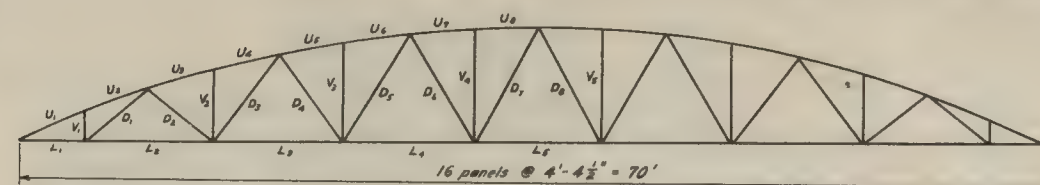
DESIGNED BY <i>D.S.H. 9/5/44</i> CHECKED BY <i>W.B.M. 8/2/42</i> TRACED BY <i>R.A.T. 2/4/42</i>	DATE DRAWING NO. <i>376</i>
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OK. - N.M.





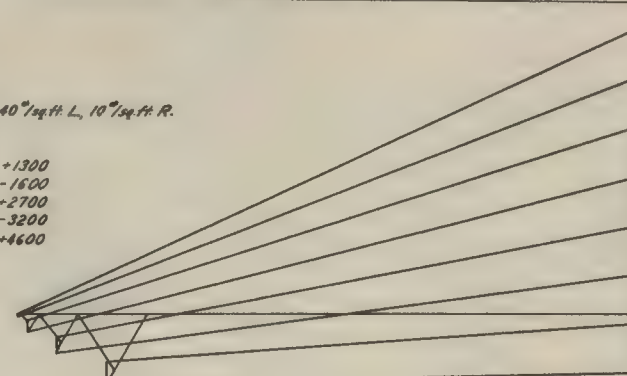




Spacing 16'-0"

Web Members Designed for 40<sup>0</sup>/sq.ft. L, 10<sup>0</sup>/sq.ft. R.

V<sub>1</sub> - 700  
V<sub>2</sub> - 600  
V<sub>3</sub> - 900  
V<sub>4</sub> - 1300  
D<sub>1</sub> -  
D<sub>2</sub> +1300  
D<sub>3</sub> -1600  
D<sub>4</sub> +2700  
D<sub>5</sub> -3200  
D<sub>6</sub> +4600

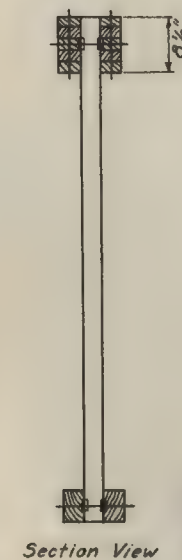


Scale: 1" = 5000"

40<sup>0</sup>/sq.ft. on left half, 10<sup>0</sup>/sq.ft. on right half.

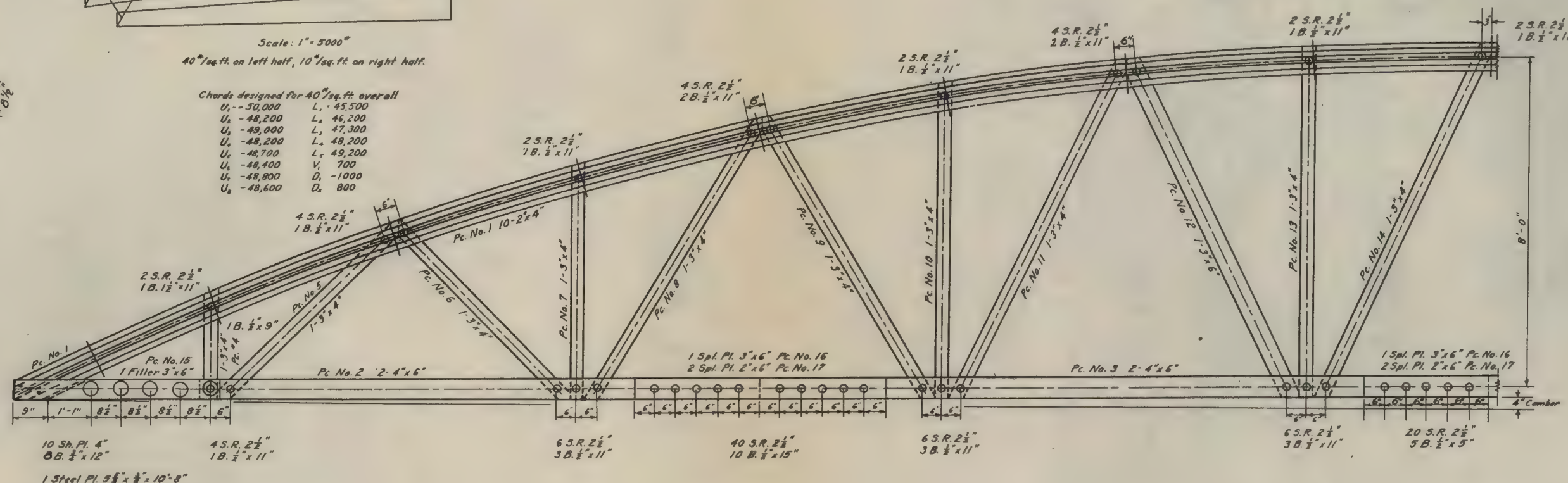
Chords designed for 40<sup>0</sup>/sq.ft. overall

U<sub>1</sub> - 50,000 L<sub>1</sub> - 45,500  
U<sub>2</sub> - 48,200 L<sub>2</sub> - 46,200  
U<sub>3</sub> - 49,000 L<sub>3</sub> - 47,300  
U<sub>4</sub> - 48,200 L<sub>4</sub> - 48,200  
U<sub>5</sub> - 48,700 L<sub>5</sub> - 49,200  
U<sub>6</sub> - 48,400 V<sub>1</sub> - 700  
U<sub>7</sub> - 48,800 D<sub>1</sub> - 1000  
U<sub>8</sub> - 48,600 D<sub>2</sub> - 800



Section View

10 Sh. Pl. 4"  
8 B. 1/2" x 12"  
1 Steel Pl. 5/8" x 3/4" x 10'-8"



70'-0" BOWSTRING TRUSS

Scale 3/4" = 1'-0"

Scale in feet

## NOTES

Top chord members are built up to the desired curvature with 2"x4" lumber, glued together with casein glue, and nailed with 20" nails, spaced 12" c.c., and in a staggered position, about 1" from each edge. This nailing will assist in holding members in position while glue is setting up. Laminations are further reinforced at panel points by a through bolt 1/2" in diameter.

## CAMBER

Camber of 4" in bottom chord should be provided for when fabricating truss.

## LUMBER SPECIFICATIONS

Lumber shall be of a structural grade with minimum allowable working stresses in pounds per sq. in. as follows:  
880<sup>0</sup> Compression parallel to grain  
1200<sup>0</sup> Extreme fiber in bending  
1,600,000<sup>0</sup> Modulus of Elasticity  
Allowable unit working stresses for commercial grades are given in the leaflet "Working Stresses for Structural Lumber and Timber" or are available from the Regional Lumber Manufacturer's Associations.

## CONNECTORS

Connectors shall be TECO split rings and shear plates as manufactured by the Timber Engineering Company, Washington, D. C.

## MATERIALS LIST PER TRUSS LUMBER CUTTING BILL \$43

Mk.	Size	Length	Make	Cut From	Order	F.B.M.	Mk.	Size	Length	Make	Cut From	Order	F.B.M.
1	2"x4"	73'-6"	10	16'-0"	40	440	10	3"x4"	7'-8"	2	18'-0"	2	36
2	4"x6"	17'-0"	4	18'-0"	4	144	11	3"x4"	9'-3"	2	10'-0"	2	36
3	4"x6"	17'-5 1/2"	4	18'-0"	4	144	12	3"x6"	9'-2"	2	20'-0"	1	30
4	3"x4"	2'-9"	2	6'-0"	1	6	13	3"x4"	8'-6"	2	Pc. 11		
5	3"x4"	6'-0"	2	12'-0"	1	12	14	3"x4"	9'-7 1/2"	2	Pc. 10		
6	3"x4"	6'-0"	2	12'-0"	1	12	15	3"x6"	4'-6"	2	16'-0"	1	24
7	3"x4"	5'-9 1/2"	2	12'-0"	1	12	16	3"x6"	6'-0"	3	12'-0"	1	18
8	3"x4"	8'-0"	2	16'-0"	1	16	17	2"x6"	6'-0"	6	12'-0"	3	36
9	3"x4"	8'-0"	2	16'-0"	1	16							
Total F.B.M. 1052													

## CONNECTORS

No.	Item	Size	No.	Item	Size
20	Shear Plates	4"x4"	208	Split Rings	2 1/2"-4"

## HARDWARE

No.	Item	Size	No.	Item	Size
16	Machine Bolts	3/4" x 12"	30	Machine Bolts	1/2" x 15"
34	"	1/2" x 9"	2	Steel Plates	5 1/2" x 10'-8"
42	"	1/2" x 11"	178	Plate Washers	2" x 2 1/2" x 1/2"

Typical design for use of  
Engineers and Architects

TIMBER ENGINEERING COMPANY  
WASHINGTON, D. C.

BOWSTRING TRUSS  
SPAN 70'-0" RISE 9'-0"

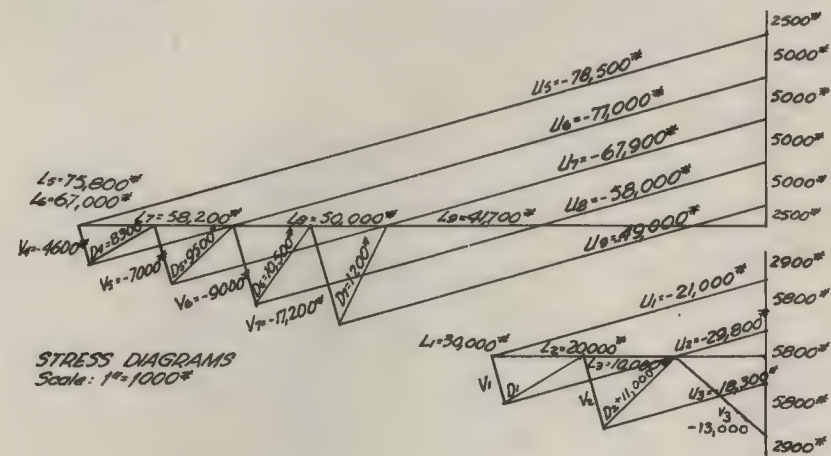
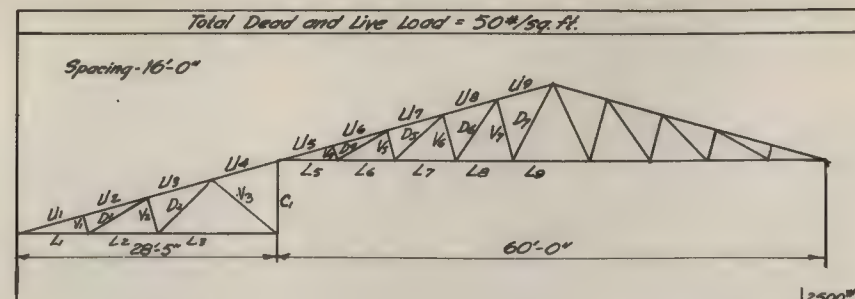
SCALE 3/4" = 1'-0" SHEET 1 OF 1

DATE 4/29/37  
DESIGNED BY J.H.C. 4/29/37  
CHECKED BY W.H.W. 12/2/40

DRAWING NO. 254-A

Rev. H.M. R.A.B. 12/2/40





MATERIAL LIST PER TRUSS													
LUMBER CUTTING BILL													
Mk.	Size	Length	Make	Cut From	Order	F.B.M.	Mk.	Size	Length	Make	Cut From	Order	F.B.M.
1	3"x12"	25'-10"	4	26'-0"	4	312	18	3"x12"	9'-0"	2	18'-0"	1	54
2	4"x12"	20'-0"	4	20'-0"	4	320	19	2"x12"	10'-8"	4	22'-0"	2	88
3	4"x12"	16'-0"	4	16'-0"	4	256	20	2"x8"	5'-0"	4	20'-0"	1	27
4	3"x8"	26'-0"	4	26'-0"	4	208	21	3"x8"	5'-0"	2	10'-0"	1	20
5	4"x8"	20'-8"	4	22'-0"	4	235	22	4"x8"	2'-3"	4	10'-0"	1	27
6	4"x8"	14'-8"	2	16'-0"	2	86	23	2"x8"	7'-4"	4	18'-0"	2	48
7	3"x6"	3'-10"	2	10'-0"	2	30	24	3"x8"	7'-4"	2	16'-0"	2	64
8	2"x6"	17'-10"	4	18'-0"	4	72	25	2"x8"	5'-0"	4	20'-0"	1	27
9	3"x6"	6'-0"	2	Pc. No. 7			26	3"x8"	5'-0"	2	10'-0"	1	20
10	2"x6"	9'-11"	4	20'-0"	2	40	27	3"x12"	3'-6"	2	18'-0"	1	54
11	4"x12"	9'-11"	2	20'-0"	1	80	28	2"x12"	3'-6"	4	14'-0"	1	28
12	3"x6"	3'-8"	2	22'-0"	1	33	29	3"x12"	3'-6"	2	Pc. No. 27		
13	2"x6"	15'-4"	4	16'-0"	4	64	30	3"x12"	2'-11"	1	Pc. No. 27		
14	3"x6"	5'-5"	2	12'-0"	1	18	31	3"x8"	0'-11 1/4"	14	14'-0"	1	28
15	2"x6"	8'-5"	4	18'-0"	4	72	32	2"x8"	1'-0"	4	Pc. No. 23		
16	3"x6"	7'-1"	2	Pc. No. 12			33	3"x10"	1'-0"	4	4'-0"	1	10
17	2"x6"	9'-7"	4	Pc. No. 15									
Total F.B.M. = 2,321													

CONNECTORS					
No.	Item	Size	No.	Item	Size
392	Split Rings	4"			
HARDWARE					
No.	Item	Size	No.	Item	Size
12	Machine Bolts	3/4"x9"	4	Machine Bolts	3/4"x19"
14	"	3/4"x11"	2	"	1"x13"
24	"	3/4"x13"	2	"	1"x15"
70	"	3/4"x15"	248	Plate Washers	3"x3"x3/8"
6	"	3/4"x17"	8	Steel Straps	3"x1/8"x1'6"
7	"	3/4"x14"	1	Punch B for 1" Bolt	

# NOTES:

## GENERAL-

This truss has been designed to carry loads at top chord panel points only. Purlins 8"x10" are satisfactory. The proper camber may be introduced into this truss by raising the lower chord 1/2" at the center during fabrication.

## LUMBER-

Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. in. as follows:

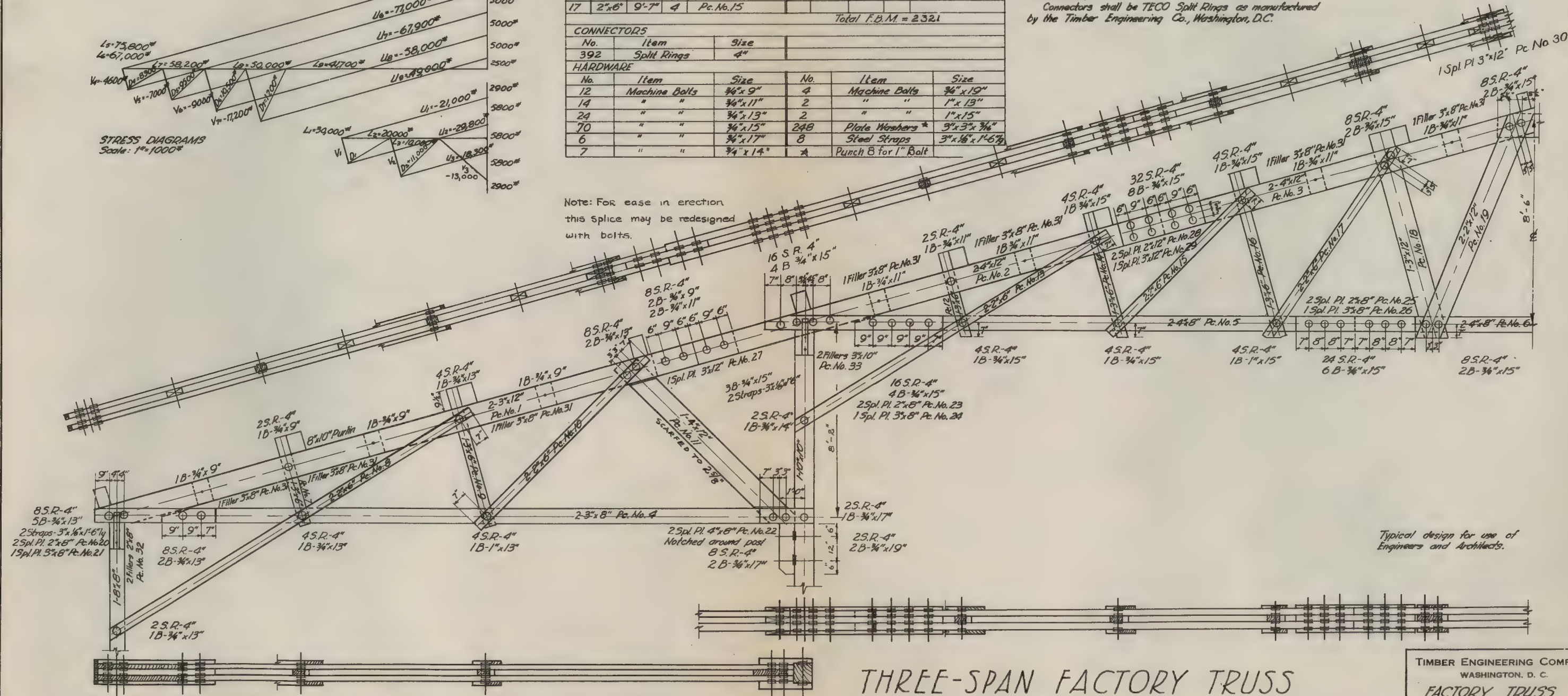
880\* Compression parallel to grain.  
1200\* Extreme fiber in bending.  
1600,000\* Modulus of Elasticity.  
except top chords which are to have the following:  
1200\* Compression parallel to grain.  
1600\* Extreme fiber in bending.

Allowable unit working stresses are given in the leaflet "Working Stresses for Structural Lumber and Timber" or are available from the Regional Lumber Manufacturers Associations.

## CONNECTORS-

Connectors shall be TECO Split Rings as manufactured by the Timber Engineering Co., Washington, D.C.

Note: For ease in erection this splice may be redesigned with bolts.



Typical design for use of Engineers and Architects.

# THREE-SPAN FACTORY TRUSS

Scale 1/2"=1'-0"  
Scale in Feet

TIMBER ENGINEERING COMPANY WASHINGTON, D. C.	
FACTORY TRUSS SPANS - 28'-5", 60'-0", 28'-5"	
SCALE 1/2"=1'-0"	SHEET 1 OF 1
DESIGNED BY J.C. 3/4/40 CHECKED BY R.A.B. 1/3/42 TRACED BY B.H.A.G. 1/3/42	DRAWING NO. 304
O.K.-N.M.- 3/4/40 J.H.C. REVISED H-3-42 D.W.	



# NOTES

## GENERAL

$\frac{3}{4}$ " Bolts are to be used for all connections unless otherwise stated. When square posts are used, either a  $\frac{1}{8}$ " x  $\frac{1}{4}$ " flat grid or a 4" splitting connector shall be used at the points shown on the drawing. When piles are used curved spiked grid connectors shall be used at the points shown on the drawing.

No provision need be made for impact on this structure.

This structure will carry an E-45 loading when the bents are spaced 16 ft. on centers and an E-60 loading with a 12 ft. or 14 ft. spacing.

Longitudinal bracing shall consist of horizontal bracing throughout its length and diagonal bracing in every other panel.

This design was prepared using the A.R.E.A. standard practice as a guide.

## LUMBER

Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. in. as follows:

1000\* Compression parallel to grain.

1400\* Extreme fiber in bending.

1,600,000 Modulus of Elasticity.

Allowable working stresses for commercial grades of lumber are given in the leaflet "Working Stresses for Structural Lumber and Timber" or are available from the Regional Lumber Manufacturers Associations. Allowable stresses are also available from the A.R.E.A.

## TIMBER CONNECTORS

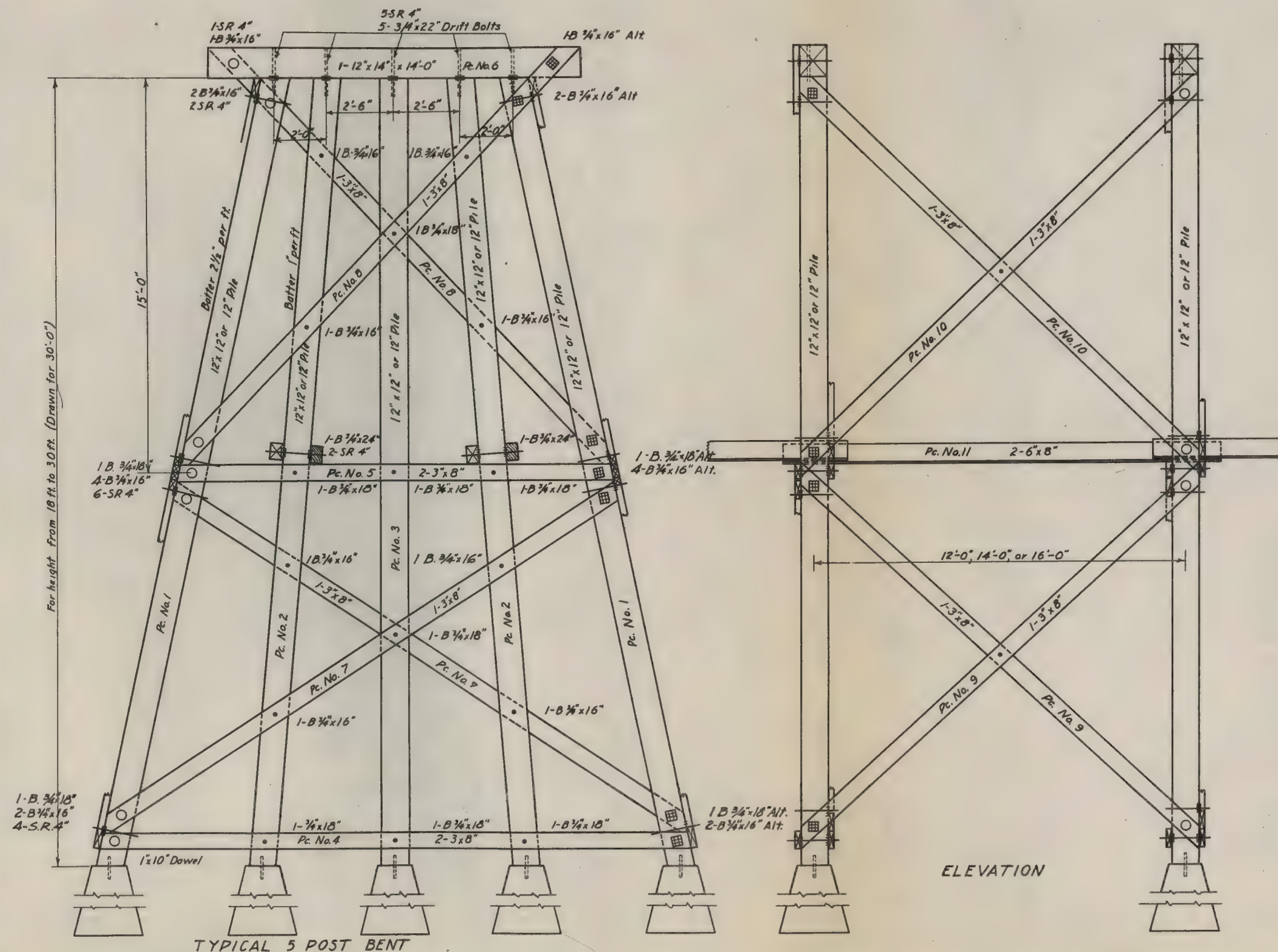
Connectors shall be TECO Connectors as manufactured by the Timber Engineering Co. Washington, D.C.

MATERIALS LIST PER TRESTLE						
LUMBER CUTTING BILL						
Mk.	Size	Length	Make	Cut From	Order	F.B.M.
1	12x12	30'-0"	4	32'-0"	4	1536
2	12x12	30'-1"	4	32'-0"	4	1536
3	12x12	30'-0"	2	30'-0"	2	720
4	3x8	22'-3"	4	24'-0"	4	192
5	3x8	16'-4"	4	18'-0"	4	144
6	12x12	14'-0"	2	14'-0"	2	302
7	3x8	23'-5"	4	24'-0"	4	192
8	3x8	22'-0"	4	22'-0"	4	176
9	3x8	21'-0"	4	22'-0"	4	176
10	3x8	21'-0"	4	22'-0"	4	176
11	6x8	16'-6"	4	18'-0"	4	288
Alternative List					Total	5528
1a	12" Pile	32'			4	
2a	12" Pile	32'			4	
3a	12" Pile	32'			2	
CONNECTORS						
No.	Item	Size				
70	Split Rings	4"				
or 56	Spiked Grids curved	4 1/8" x 4 1/8"				
14	Spiked Grids flat	4 1/8" x 4 1/8"				
HARDWARE						
4	Machine Bolts	3/4" x 24"				
24	Machine Bolts	1/2" x 18"				
52	Machine Bolts	1/4" x 16"				
160	Plate Washers	3" x 3" x 3/16"				
10	Drift Pins	3/8" x 22"				
10	Dowels	1" x 10"				

Typical plan for use of architects and engineers.

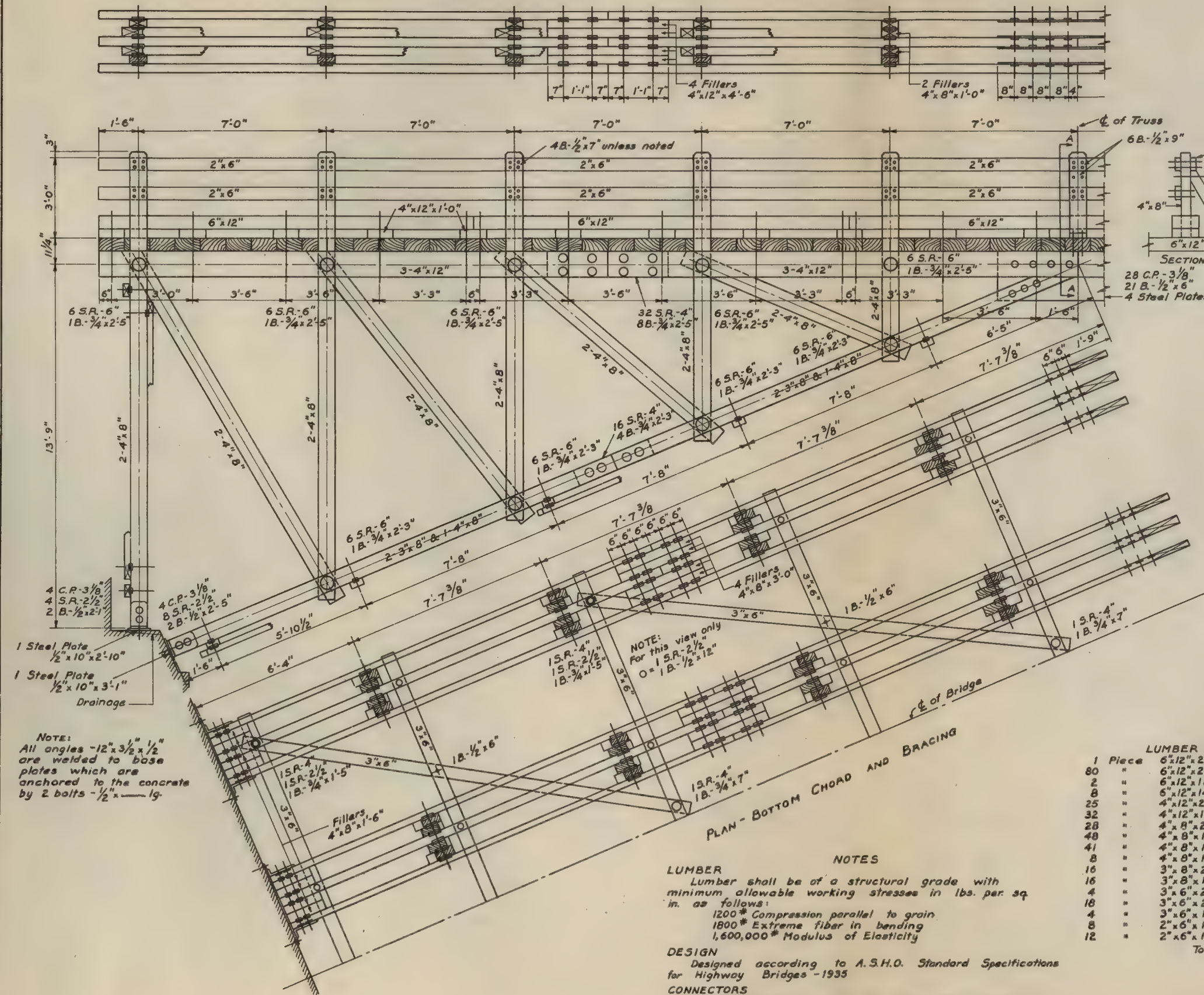
TIMBER ENGINEERING COMPANY WASHINGTON, D. C.	
TYPICAL TRESTLE	
LOADING E45-E60 HEIGHT 18'-30"	
SCALE $\frac{1}{2}$ " = 1'-0"	SHEET 1 OF 1
DATE DESIGNED BY J.Corr. 7/20/37 CHECKED BY R.B. 11/20/41 TRACED BY G.M.K. 11/23/41	DRAWING NO. 246

O.K. N.M.





PLAN - TOP CHORD



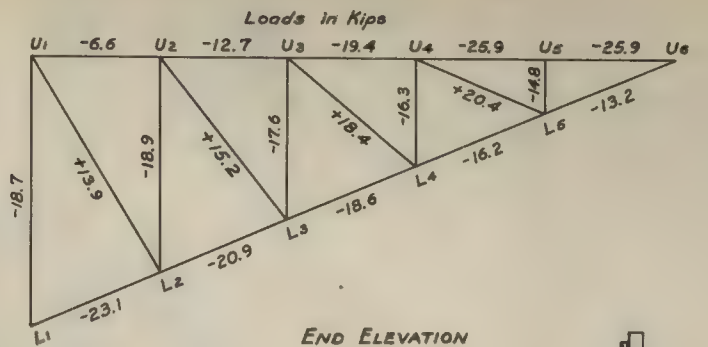
PLAN - BOTTOM CHORD AND BRACING

NOTES

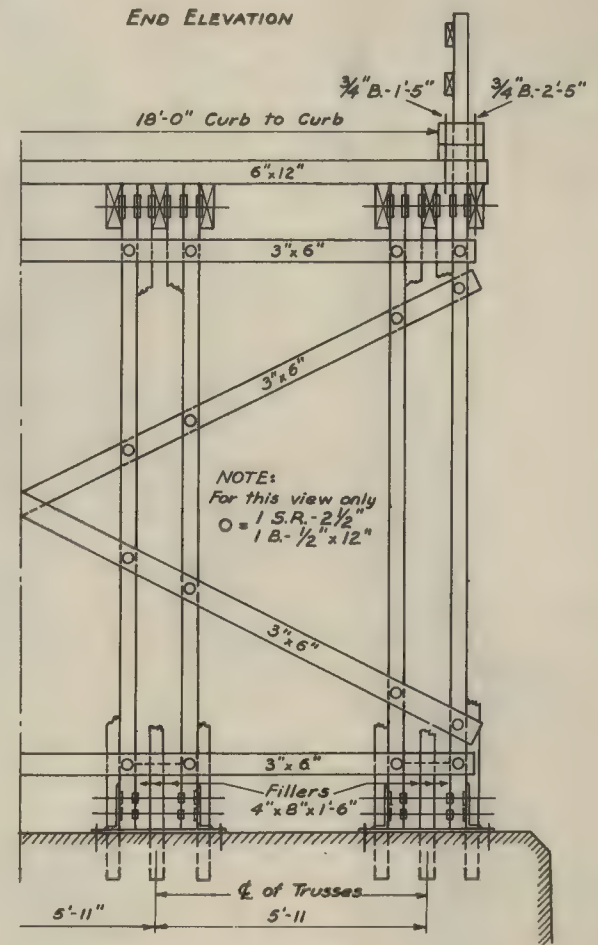
**LUMBER**  
Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. in. as follows:  
1200\* Compression parallel to grain  
1800\* Extreme fiber in bending  
1,600,000\* Modulus of Elasticity

**DESIGN**  
Designed according to A.S.H.O. Standard Specifications for Highway Bridges - 1935

**CONNECTORS**  
Timber connectors shall be TECO Split Rings and Claw Plates as manufactured by the Timber Engineering Company, Wash., D.C.



END ELEVATION

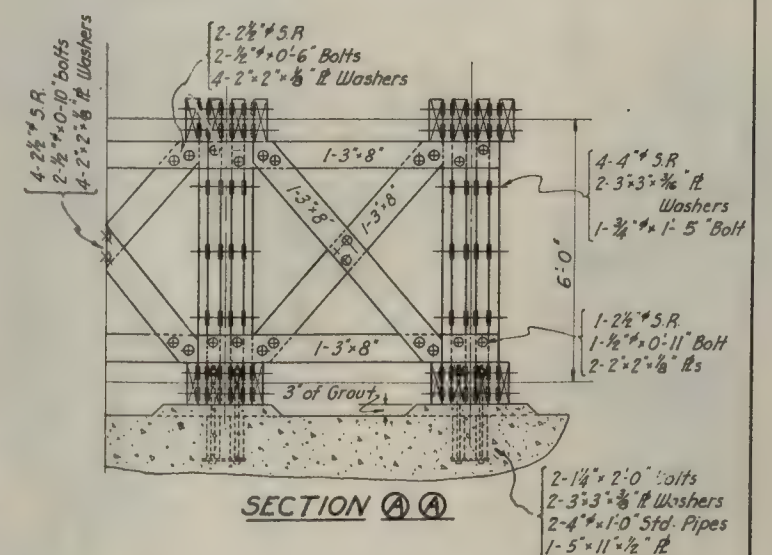
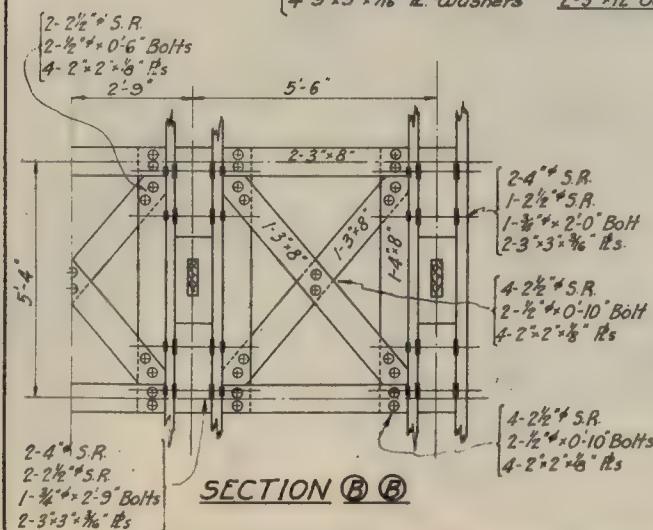
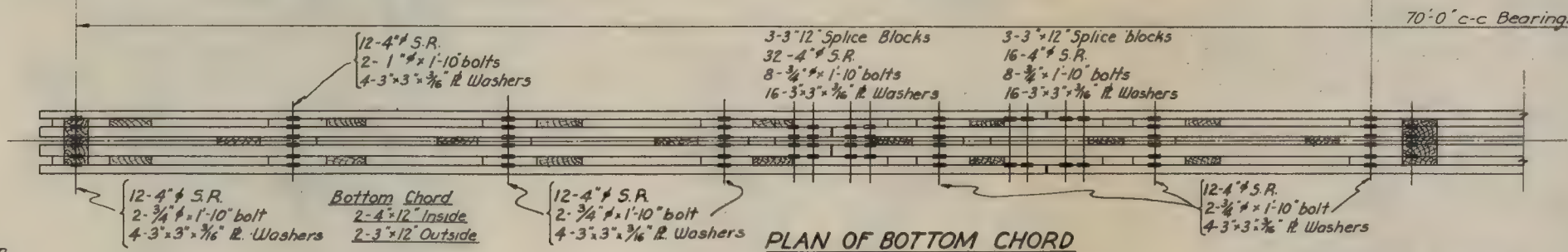
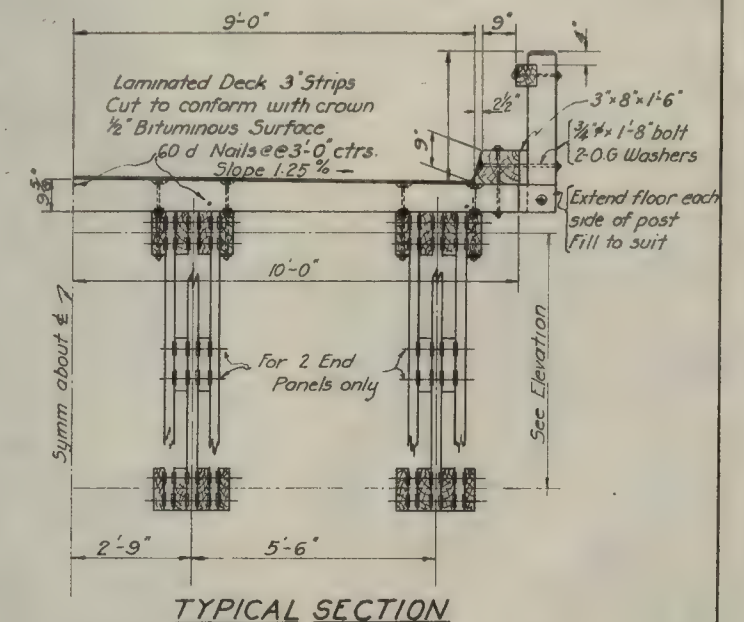
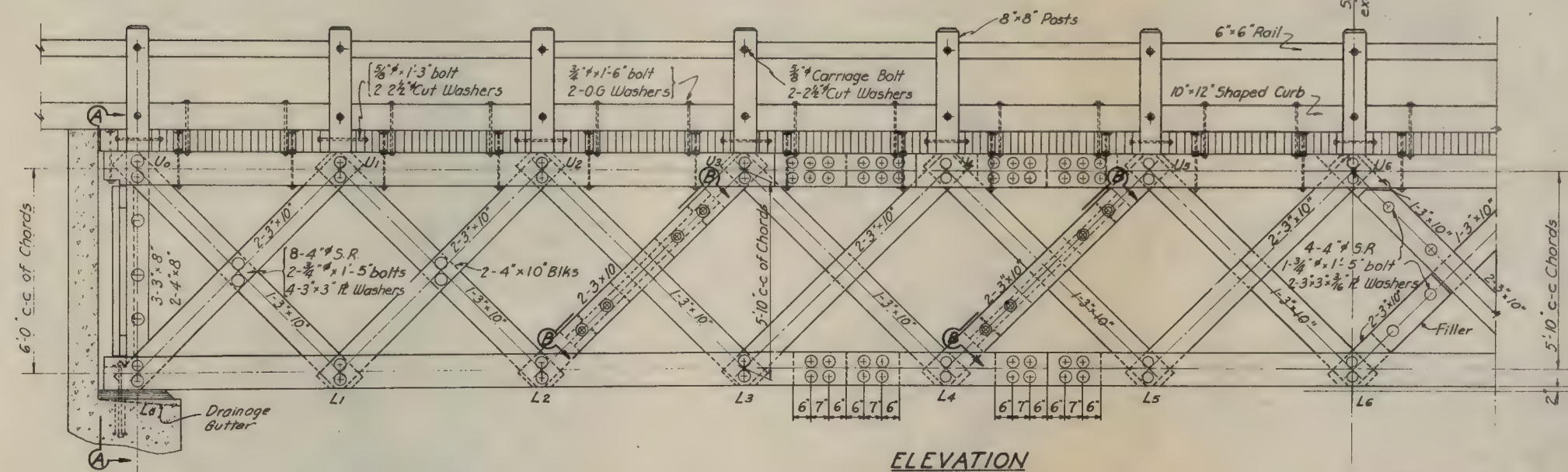
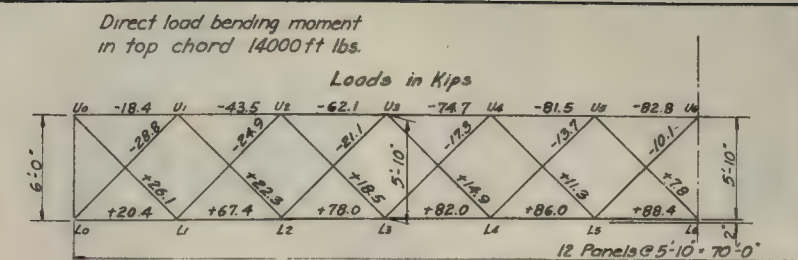
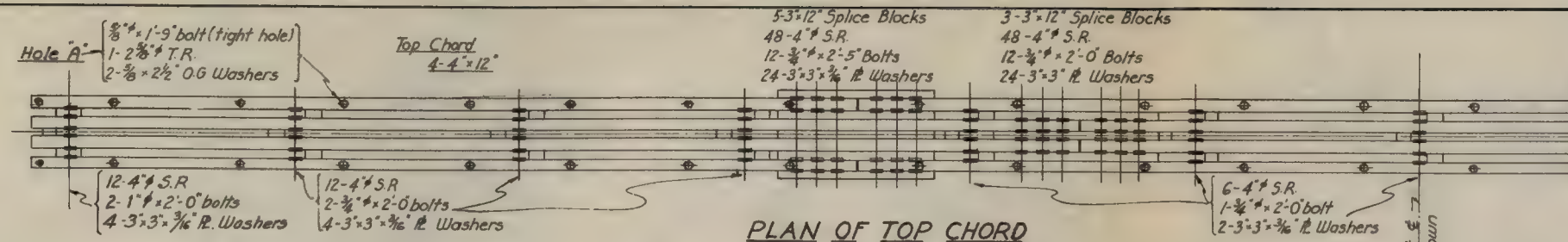


MATERIALS LIST

LUMBER (S4S)		HARDWARE	
1 Piece			
80	6"x12"x24'-0"	144	FBM
2	6"x12"x20'-0"	9600	"
2	6"x12"x18'-0"	216	"
8	6"x12"x14'-0"	672	"
25	4"x12"x20'-0"	2000	"
32	4"x12"x18'-0"	2304	"
28	4"x8"x20'-0"	1494	"
48	4"x8"x18'-0"	2304	"
41	4"x8"x16'-0"	1750	"
8	4"x8"x14'-0"	299	"
16	3"x8"x20'-0"	640	"
16	3"x8"x18'-0"	576	"
4	3"x6"x22'-0"	132	"
18	3"x6"x20'-0"	540	"
4	3"x6"x18'-0"	108	"
8	2"x6"x16'-0"	128	"
12	2"x6"x14'-0"	168	"
Total		23,075	F.B.M.
HARDWARE			
432	Split Rings	6"	6"
400	"	4"	4"
200	"	2 1/2"	2 1/2"
288	Claw Plates	3 1/8"	3 1/8"
176	Machine Bolts	1/2"x6"	1/2"x6"
168	"	1/2"x7"	1/2"x7"
16	"	1/2"x9"	1/2"x9"
16	"	1/2"x12"	1/2"x12"
16	"	1/2"x2'-1"	1/2"x2'-1"
16	"	1/2"x2'-5"	1/2"x2'-5"
8	"	3/4"x7"	3/4"x7"
60	"	3/4"x1'-5"	3/4"x1'-5"
64	"	3/4"x2'-3"	3/4"x2'-3"
156	"	3/4"x2'-6"	3/4"x2'-6"
32	Angles welded to	12"x3 1/2"x1/2"	12"x3 1/2"x1/2"
8	Steel Plates and	1/2"x10"x3'-1"	1/2"x10"x3'-1"
8	"	1/2"x10"x2'-10"	1/2"x10"x2'-10"
16	"	3/8"x22"x6'-0"	3/8"x22"x6'-0"
590	Washers	2"x2"x1/8"	2"x2"x1/8"
432	"	3"x3"x3/16"	3"x3"x3/16"
144	"	3"x3"x1/4"	3"x3"x1/4"
32	Anchor Bolts	1/2"x19"	1/2"x19"
198	Cut washers	2"	2"

TIMBER ENGINEERING COMPANY  
WASHINGTON, D. C.  
**70'-0" ARCH**  
H-15 LOADING 18'-0" ROADWAY  
SCALE 1/2" = 1'-0" SHEET 1 OF 1  
DATE 8/39 DRAWING NO. B-2  
DESIGNED BY D. Burnett 8/39  
CHECKED BY J.H.C. & D.S.H. 10/39  
TRACED BY D.S.H. 8/39  
Revised N.M. 1/5/40 J.H.C.





### LIST OF MATERIALS

<u>Lumber</u>	<u>Bolts with Sq. Heads</u>	<u>Miscellaneous</u>
32 Pieces 4"x12"x22'	26 - 1/2" x 1'-8"	2816 - 4" Split Rings
16 " " " 28'	216 " x 2'-0"	536 2 1/2" "
8 " " " 18'	216 " x 1'-10"	208 2 1/2" Toothed Rings
16 " " " 30'	96 " x 2'-5"	104 3/8" x 2" Cut Washers
16 " 3"x12"x28'	72 " x 1'-5"	416 1/8" x 2 1/2" Q.B. Washers
8 " " " 18'	32 " x 2'-9"	148 3/4" x 3" " "
17 " " " 24'	208 3/8" x 1'-9"	1328 5"x3"x3/8" B. " "
76 " 3"x10"x20'	26 " x 1'-3"	616 2"x2 1/2" " "
22 " 3"x8"x20'	48 3/4" x 1'-6"	16 3"x3"x3/8" " "
2 " " " 18'	32 1/2" x 0'-11"	8 5"x1 1/2" " "
6 " " " 14'	144 " x 0'-6"	16 4"x1'-0" Std. Pipe
14 " " " 26'	16 1" x 1'-10"	4 tons bituminous Surfacing
324 " 3"x10"x20'	132 " x 0'-10"	500 lbs - 60 d nails
6 " 10"x12"x24'	16 1 1/2" x 2'-0"	
8 " 6"x6"x18'	16 1" x 2'-0"	
4 " 8"x8"x22'	26 - 3/8" x 0'-11 1/2" Carriage Bolts	
1 " " " 8'		

## GENERAL NOTES

All lumber shall be 1800\*F, 1200\*C, 1,600,000\*E grade and surfaced four sides to  $\frac{3}{8}$ " less than the nominal size (except vertical dimension of laminated deck) All truss lumber including cross frames shall be cut, bored, (except holes A") and grooved in the shop; then given an eight pound per cubic foot treatment of creosote oil by the empty cell process. All other lumber shall be given a  $\frac{1}{2}$  lb. per cubic foot treatment of chromated sodium chloride after all shop work has been completed; then open piled under cover until thoroughly dry. Holes in the laminated deck and holes A" in the truss shall be bored in the field and swabbed with hot creosote oil. All other boring and cutting shall be done before treatment. All hardware shall be galvanized. Exposed metal in the trusses shall be given two coats of a paint consisting of red lead, linseed oil and graphite. Railing, curb, and exterior exposed faces of deck shall be painted with two coats of white lead and linseed oil. Design loading H-15 Equivalent uniform load

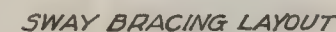
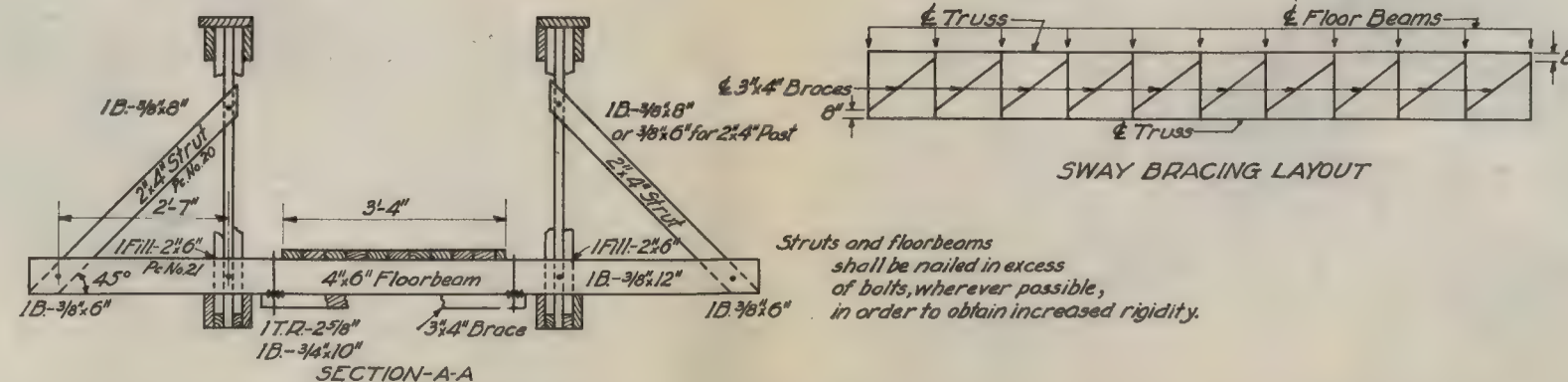
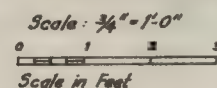
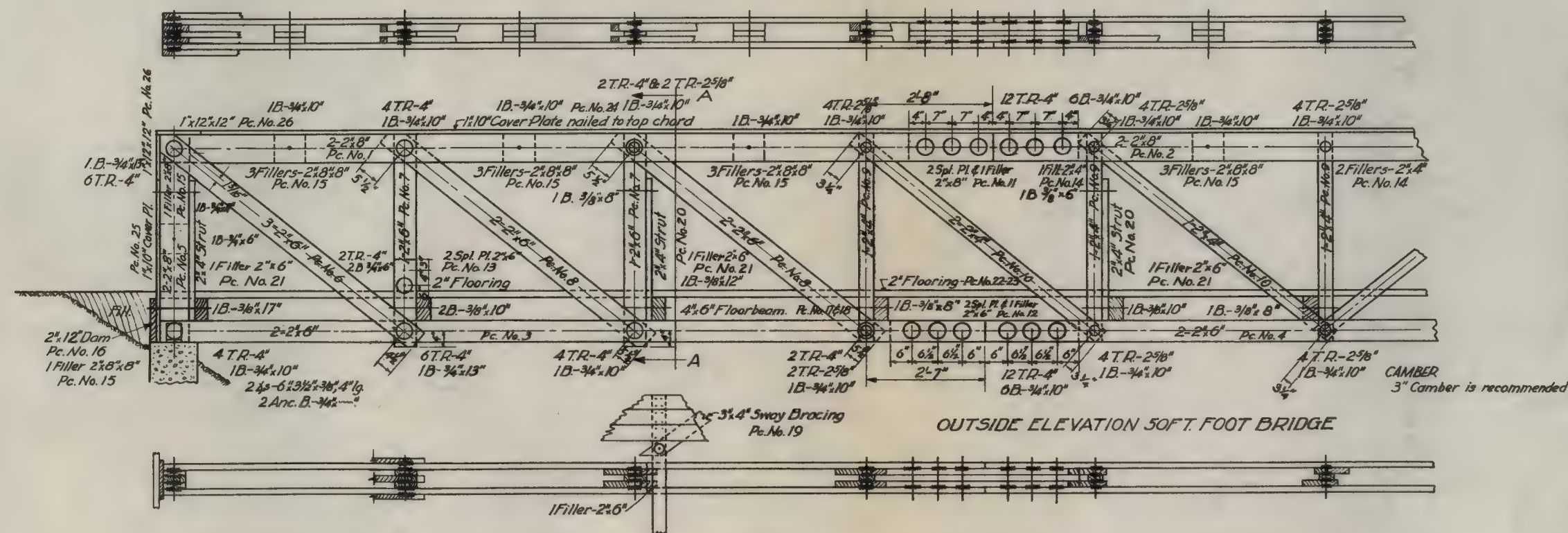
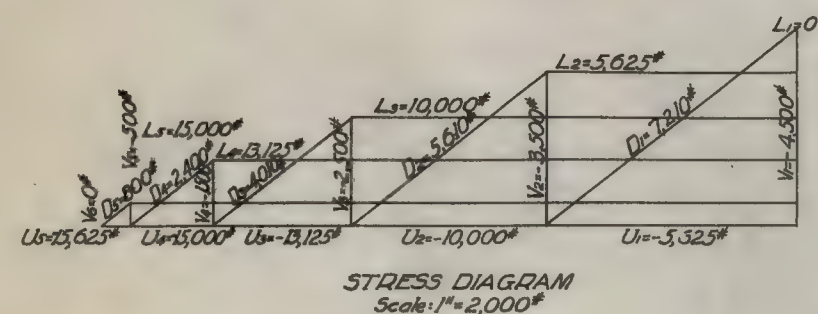
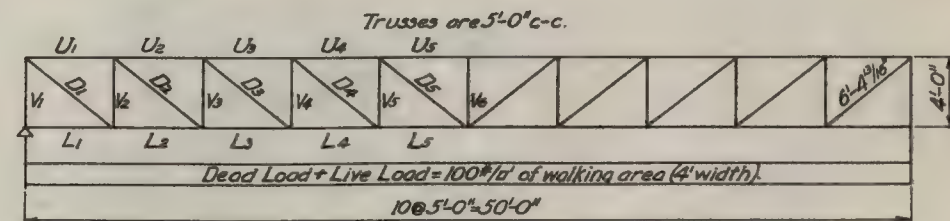
TIMBER ENGINEERING COMPANY  
WASHINGTON, D. C.  
**70'-0" DOUBLE WARREN**  
**H-15 LOADING 18'-0" ROADWAY**

SCALE	1/2" = 1'-0"	SHEET	1	OF	1
DATE			DRAWING NO.		
DESIGNED BY E.H. McDroom 5/29			B-7		
CHECKED BY J.C. D.S.H. 10/29					
TRACED BY E.H. McDroom 8/31					
Revised N.M. 11/10/40 J.H.C.					



Revised NM 1/26/90 LNC





*Struts and floorbeams shall be nailed in excess of bolts, wherever possible, in order to obtain increased rigidity.*

NOTES:

*GENERAL.*

*All timber shall be pressure treated with an approved wood preservative. All metal shall be galvanized. Bolts, if possible, should be placed with their heads next to the walking area. Concrete piers to be designed as conditions warrant.*

LUMBER

Lumber shall be of a structural grade with minimum allowable working stresses in lbs. per sq. in. as follows:

880# Compression parallel to grain.

1,200\* *Extreme fiber in bending.*

1,600,000# Modulus of elasticity.

Allowable unit working stresses for commercial grades of lumber are given in the leaflet entitled "Working Stresses for Structural Lumber and Timber" or are available from the Regional Lumber Manufacturers Associations.

**TIMBER CONNECTORS.**

Connectors shall be TECO toothed rings as manufactured by the Timber Engineering Company, Washington, D.C.

### MATERIALS LIST - COMPLETE BRIDGE

## LUMBER CUTTING BILL

Mk.	Size	Length	Wake	Cyl From	Order	F.D. M.
1	2"x8"	18'-0"	4	18'-0"	5	192
2	2"x8"	14'-6"	4	24'-0"	4	128
3	2"x6"	17'-10"	8	18'-0"	8	144
4	2"x6"	14'-10"	4	16'-0"	4	64
5	2"x8"	4'-8"	8	Pc. No. 2		
6	2"x6"	7'-3"	12	12'-0"	12	144
7	2"x6"	4'-8"	8	10'-0"	4	40
8	2"x6"	7'-4"	16	16'-0"	8	128
9	2"x4"	4'-6"	10	12'-8"	7	73
10	2"x4"	7'-0"	12	12'-0"	12	96
11	2"x4"	3'-8"	12	12'-0"	4	32
12	2"x6"	4'-2"	12	Pc. No. 6		
13	2"x6"	2'-0"	8	16'-0"	1	16
14	2"x4"	0'-7 1/2"	8	Pc. No. 9		
15	2"x8"	0'-8"	32	18'-0"	2	48
16	2"x12"	6'-0"	2	12'-0"	1	24
17	4"x6"	6'-0"	5	6'-0"	5	60
18	4"x6"	11'-0"	6	22'-0"	3	132
19	3"x4"	6'-9"	10	14'-0"	5	70
20	2"x4"	4'-6"	12	Pc. No. 10		
21	2"x6"	0'-6"	12	Pc. No. 6		
22	2"x4"	10'-6"	17	12'-0"	17	136
23	2"x4"	10'-0"	39	10'-0"	39	273
24	1"x10"	10'-0"	10	10'-0"	10	90
25	1"x10"	3'-7 1/2"	4	16'-0"	1	14
26	1"x12"	1'-0"	8	8'-0"	1	8

## CONNECTORS

No.	Item	Size
100	Toothed Rings	2 7/8"
216	" "	4"

216	
HARDWARE	

No.	Item	Size
10	Machine Bolts	$\frac{3}{8}$ " x 6"
10	" "	$\frac{3}{8}$ " x 8"
8	" "	$\frac{3}{8}$ " x 10"
4	" "	$\frac{3}{8}$ " x 11"
4	" "	$\frac{3}{8}$ " x 12"
4	" "	$\frac{3}{8}$ " x 17"
12	" "	$\frac{3}{4}$ " x 6"
120	" "	$\frac{1}{4}$ " x 10"
8	" "	$\frac{3}{8}$ " x 13"
92	Plate Washers	$1\frac{1}{2}$ " x $1\frac{1}{2}$ " x $\frac{1}{8}$ "
272	" "	$3\frac{1}{2}$ " x $3\frac{1}{2}$ " x $\frac{3}{8}$ "
8	Angles	$\frac{3}{4}$ " x $3\frac{1}{2}$ " x $\frac{1}{8}$ "-4" 1/8"
8	Anchor Bolts	$\frac{3}{4}$ " x 4"

*Typical design for use of  
Engineers and Architects.*

**TIMBER ENGINEERING COMPANY**  
WASHINGTON, D. C.

FOOT BRIDGE

SPAN-50'-0" WALK-4'-0"

SCALE  $3/4"=1'-0"$  SHEET 1 OF 1

TRACED BY W. ADAM DATE 8/23/77 DRAWING NO.

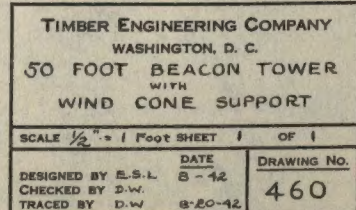
DESIGNED BY J. CARR 4/2/37

CHECKED BY ADAM & F.P.C. 2/1/07 220 0.1

REVISED 9/28/37 Rev. N.M. AGD 12/2/41

220.







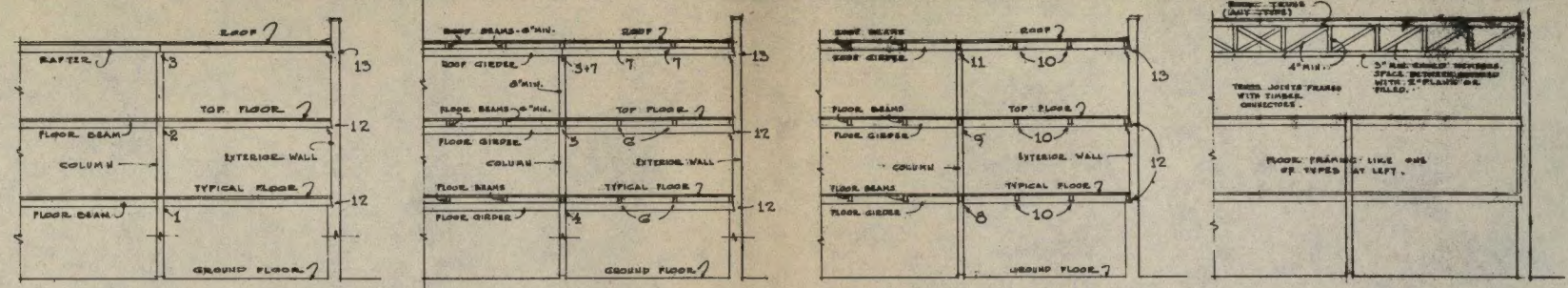
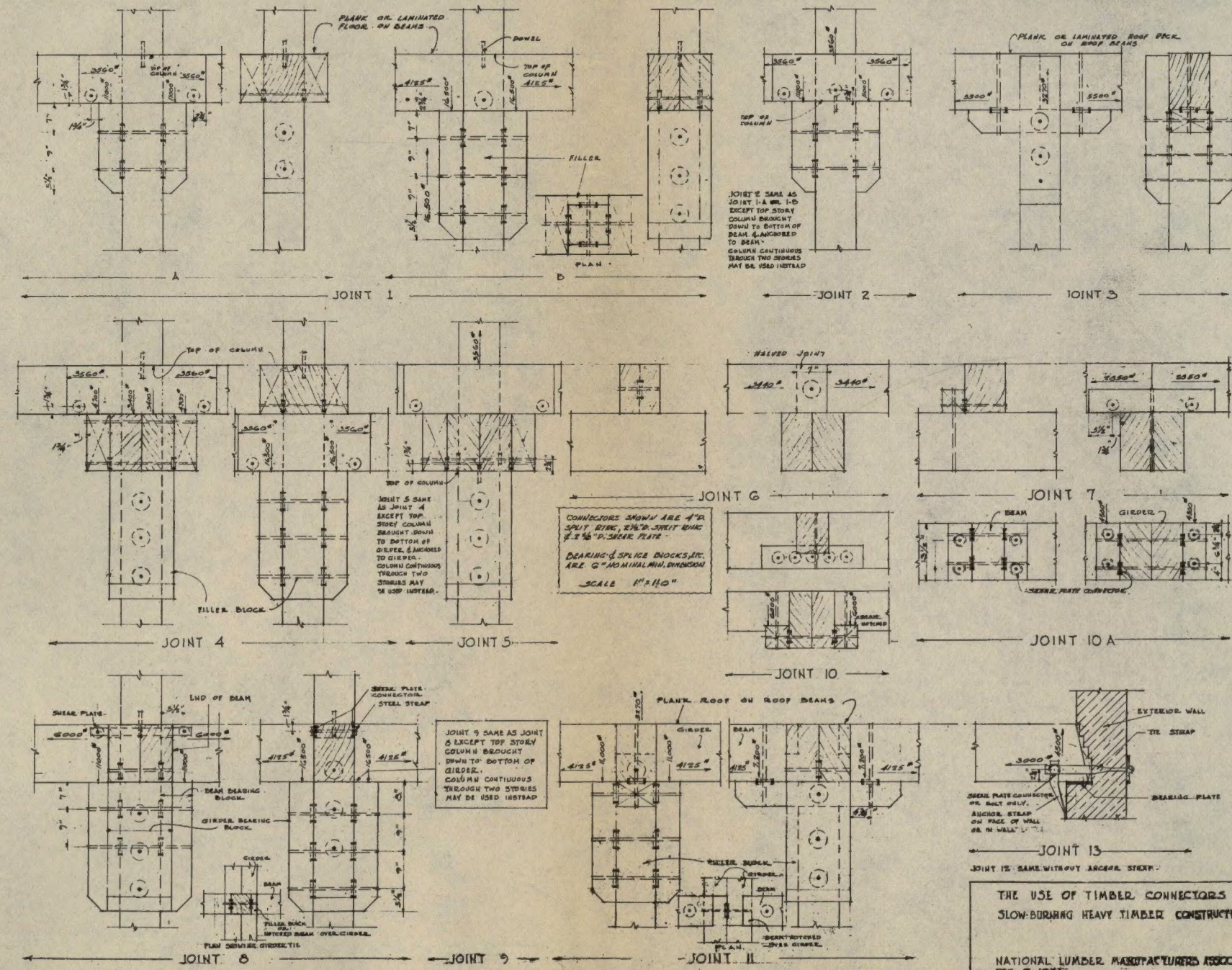


DIAGRAM SECTIONS OF TYPES OF SLOW-BURNING, HEAVY TIMBER CONSTRUCTION

SHOWING LOCATION OF TIMBER CONNECTOR JOINTS.  
(EXTERIOR WALL CONSTRUCTION & THICKNESS, BEAM BEARING PLATES OR BOLTS, CORNICES OR PARAPET WALLS, TIMBER, GIRDERS, ETC. SHALL CONFORM TO THE REQUIREMENTS FOR HEAVY TIMBER CONSTRUCTION.)

ALL VERTICAL LOADS TRANSMITTED BY MEANS OF METAL CONNECTORS.  
PROTECTED BY HEAVY TIMBER FRAMING MEMBERS.  
ROOF BEAMS & TOP FLOOR COLUMNS ANCHORED AGAINST DRIFT.  
ALL BEAMS & GIRDERS END TO END JOINTED TO OUTSIDE WALLS.  
LOADS SHOWN ARE RECOMMENDED MAXIMUM LOADS FOR GRADES SHOWN  
AND ARE INCLUDED FOR ILLUSTRATION ONLY.



THE USE OF TIMBER CONNECTORS IN  
SLOW-BURNING HEAVY TIMBER CONSTRUCTION  
NATIONAL LUMBER MANUFACTURERS ASSOCIATION  
DEC. 2, 1934



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# *Teco Services*

In order to assist users of structural lumber and the Teco timber connector system of construction, the Timber Engineering Company maintains the following services.

## *Order Service*

A complete line of Teco connectors and tools are maintained for prompt shipment to customers supplying priorities. These connectors and tools are manufactured to rigid designs and specifications so that customers can be assured of receiving quality products at all times.

## *Consulting Service*

Teco maintains a staff of engineers to consult with architects and engineers on their design problems. In addition to our Washington staff, the New York, Chicago, Minneapolis, New Orleans, San Francisco and Portland offices of the National Lumber Manufacturers Association and the Timber Engineering Company have engineering consultants available. Our distributors, and fabricators in all parts of the country also render helpful services to architects and engineers.

## *Design Data Service*

Teco and its parent—the National Lumber Manufacturers Association—have available for distribution to architects and engineers complete and up-to-date data on all phases of timber design. This literature includes tables and charts on timber beams, columns, joists and rafters, plank floors, heavy mill construction, connector loads, bolt loads, commercial grades and stresses, etc. Also, information is supplied as to recommended design procedures.

## *Typical Design Service*

"Typical Designs of Timber Structures" contains only a representative group of the typical designs available from Teco. There are over 200 other designs in Teco's file and copies of these are available on request to architects and engineers. Teco is continually adding to this file of designs, which are prepared as guides to architects and engineers in the preparation of their own designs.

## *Research Service*

Teco is continually conducting research and sponsoring research at outstanding engineering colleges and laboratories. This research is conducted to increase the design knowledge of timber designers. The benefits and results of this research are passed on to interested parties in the form of design data and improved products.

*Specify **TECO** Connectors and Tools*